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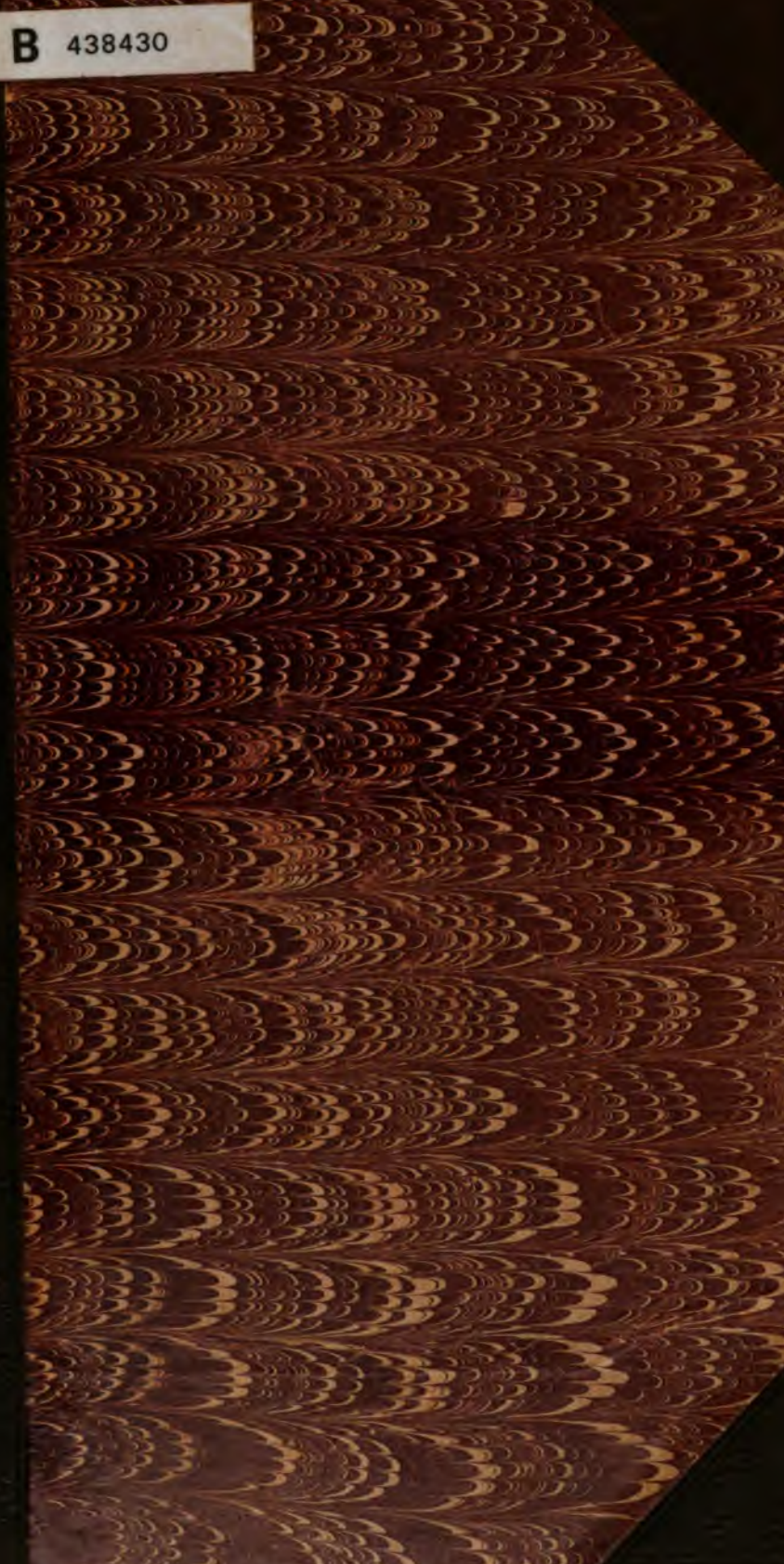
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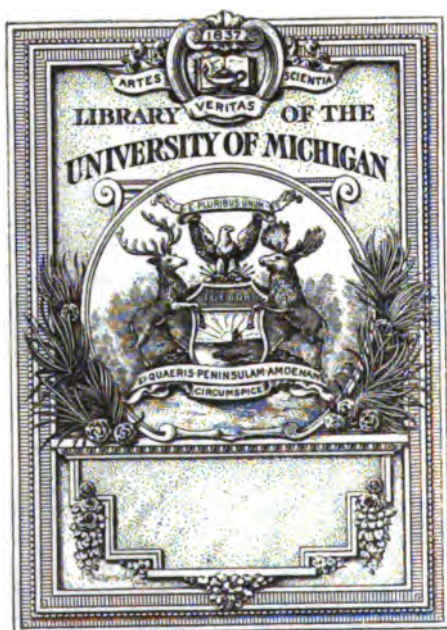
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CONSULAR REPORTS.

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COMMERCE, MANUFACTURES, ETC.

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Full directions for binding the Consular Reports are given in No. 131, page 663.

VALUES OF FOREIGN COINS.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

These estimates "are to be taken (by customs officers) in computing the value of all foreign merchandise made out in any of said currencies, imported into the United States."

The following statements, running from January 1, 1874, to April 1, 1894, have been prepared to assist in computing the proper values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account that the ruble of Russia, for instance, has fluctuated from 77.17 cents in 1874 to 37.2 cents in April, 1894, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, and 1882 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—Countries with fixed currencies.

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange." It follows, therefore, that when foreign money orders are required, the post-office authorities, to save the Department from incurring loss in such transactions, add the rate of exchange to these valuations.

Countries.	Standard.	Monetary unit.	Value in terms of United States gold.	Coins.
Argentine Republic*	Gold and silver...	Peso	\$0.96, 5	Gold—Argentine (\$4.82, 1) and $\frac{1}{2}$ Argentine; silver—peso and divisions.
Austria-Hungary†	Gold	Crown .....	.20, 3	Gold—20 crowns (\$4.05, 2) and 20 crowns.
Belgium.....	Gold and silver...	Franc.....	.19, 3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis .....	.54, 6	Gold—5, 20, and 20 milreis; silver— $\frac{1}{2}$, 1, and 2 milreis.
British North America (except Newfoundland).	do.....	Dollar.....	1.00	
Chile‡	Gold and silver...	Peso .....	.91, 2	Gold—escudo (\$1.82, 4), doubloon (\$4.56, 1), and condor (\$9.12, 8); silver—peso and divisions.
Cuba.....	do.....	do.....	.92, 6	Gold—doubloon (\$5.01, 7); silver—peso.
Denmark.....	Gold	Crown .....	.26, 8	Gold—10 and 20 crowns.
Egypt.....	do.....	Pound (100 piasters).	4.94, 3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland.....	do.....	Mark.....	.19, 3	Gold—10 and 20 marks (\$1.93 and \$3.85, 9).
France.....	Gold and silver...	Franc.....	.19, 3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany.....	Gold	Mark.....	.23, 8	Gold—5, 10, and 20 marks.
Great Britain.....	do.....	Pound sterling....	4.86, 6½	Gold—sovereign (pound sterling) and half sovereign.
Greece.....	Gold and silver...	Drachma.....	.19, 3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti.....	do.....	Gourde.....	.96, 5	Silver—gourde.
Italy.....	do.....	Lira.....	.19, 3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Liberia.....	Gold	Dollar.....	1.00	
Netherlands§	Gold and silver...	Florin.....	.40, 2	Gold—10 florins; silver— $\frac{1}{2}$, 1, and 2½ florins.
Newfoundland.....	Gold	Dollar.....	1.01, 4	Gold—\$2 (\$2.02, 7).
Portugal.....	Gold	Milreis	1.08	Gold—1, 2, 5, and 20 milreis.
Spain.....	Gold and silver...	Peseta.....	.19, 3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway...	Gold	Crown.....	.26, 8	Gold—10 and 20 crowns.
Switzerland.....	Gold and silver...	Franc.....	.19, 3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey.....	Gold	Piaster.....	.04, 4	Gold—25, 50, 100, 200, and 500 piasters.
Venezuela.....	Gold and silver...	Bolivar.....	.19, 3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

* In 1874 and 1875 the gold standard prevailed in the Argentine Republic. Its currency does not appear in the statements again until 1883, when the double standard prevailed, and the peso attained a fixed value of 96.5 cents.

† On reference to the table of "fluctuating currencies," it will be seen that Austria had the silver standard up to and including the quarter ending July 1, 1892. The next quarter (October 1) inaugurated the gold standard (see note under table of "fluctuating currencies").

‡ The gold standard prevailed in Chile until January 1, 1890. The value of the peso has been the same under both standards.

§ The Netherlands florin, as will be seen in the "fluctuating" table, became fixed in value (40.2 cents) in 1880.

B.—Countries with fluctuating currencies, 1874-'90.

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875.	1876.	1880.	1889.	1894.
Austria-Hungary*.	Silver.....	Florin.....	\$0.47,6	\$0.45,3	\$0.45,3	\$0.41,3	\$0.40,1	\$0.39,8
Bolivia.....	do.....	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America.....	do.....	Peso.....	.96,5	.91,8	.91,8	.83,6	.....	.....
China.....	Silver.....	Haikwan tael.....	1.61	1.61	.....	.....	.....	.....
Colombia.....	do.....	Peso.....	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador.....	do.....	do.....	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†.....	Gold.....	Pound (100 piasters).	.....	.....	4.97,4	4.97,4	4.90	4.90
India.....	Silver.....	Rupce.....	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan.....	{ Gold..... Silver..... }	{ Yen..... }	{ .99,7 }	{ .99,7 }	{ .99,7 }	{ .99,7 }	{ }	{ }
Mexico.....	do.....	Dollar.....	1.04,7½	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡.....	Gold and silver..	Florin.....	.40,5	.38,5	.38,5	.40,2	.....	.....
Peru.....	Silver.....	Sol.....	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia.....	do.....	Ruble.....	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli.....	do.....	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*.	Silver.....	Florin.....	\$0.39,3	\$0.37,1	\$0.35,9	\$0.34,5	\$0.33,6	\$0.42
Bolivia.....	do.....	Dollar until 1880; boliviano thereafter.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America.....	do.....	Peso.....	.....	.....	.....	.69,9	.68	.85
Colombia.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†.....	Gold.....	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.93,3
India.....	Silver.....	Rupce.....	.37,8	.35,7	.34,6	.33,2	.32,3	.40,4
Japan.....	{ Gold..... Silver..... }	{ Yen..... }	{ .85,8 }	{ .81 }	{ .78,4 }	{ .75,3 }	{ .73,4 }	{ .91,7 }
Mexico.....	do.....	Dollar.....	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru.....	Silver.....	Sol.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia.....	do.....	Ruble.....	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli.....	do.....	Mahbub of 20 piasters.	.72,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (*see* CONSULAR REPORTS, No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at \$4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—Quarterly valuations of fluctuating currencies, 1891-'94.

Countries.	Monetary unit.	1892.				1893.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Austria-Hungary*	{ Gold crown.....				\$0.20,3				
	{ Silver florin.....	\$0.34,1	\$0.32,8	\$0.32					
Bolivia.....	Silver boliviano.....	.69,1	.66,5	.64,9	.61,6	\$0.61,3	\$0.61	\$0.60,4	\$0.53,1
Central America....	Silver peso.....	.69,1	.66,5	.64,9	.61,6	.61,3	.61	.60,4	.53,1
China†.....	{ Shanghai tael.....	1.02,1	.98,2	.95,8	.91	.90,6	.90,1	.89,2	.78,4
	{ Haikwan tael.....	1.13,7	1.09,3	1.06,7	1.01,3	1.01	1.00,4	.99,4	.87,4
Colombia.....	Silver peso.....	.69,1	.66,5	.64,9	.61,6	.61,3	.61	.60,4	.53,1
Ecuador.....	do.....	.69,1	.66,5	.64,9	.61,6	.61,3	.61	.60,4	.53,1
India.....	Silver rupee.....	.32,8	.31,6	.30,8	.29,3	.29,2	.29	.28,7	.25,2
Japan‡.....	Silver yen.....	.74,5	.71,6	.69,9	.66,4	.66,1	.65,8	.65,1	.57,3
Mexico.....	Silver dollar.....	.75	.72,2	.70,4	.66,9	.66,6	.66,2	.65,6	.57,7
Peru.....	Silver sol.....	.69,1	.66,5	.64,9	.61,6	.61,3	.61	.60,4	.53,1
Russia§.....	Silver ruble.....	.55,3	.53,1	.51,9	.49,2	.49,1	.48,8	.48,3	.42,5
Tripoli.....	Silver mahbub.....	.62,3	.60	.58,5	.55,5	.55,3	.55	.54,5	.47,9
Venezuela ¶.....	Silver bolivar.....	.13,8	.13,3	.13	.12,3				

Countries.	Monetary unit.	1894.				1895.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia.....	Silver boliviano.....	\$0.51,6	\$0.46,5	\$0.45,7	\$0.46,4	\$0.45,5	\$0.44,1	\$0.48,6	.48,6
Central America....	Silver peso.....	.51,6	.46,5	.45,7	.46,4	.45,5	.44,1	.48,6	.48,6
	{ Shanghai tael.....	.96,2	.68,6	.67,6	.68,5	.67,3	.65,2	.71,8	.71,8
China†.....	{ Haikwan tael.....	.84,9	.76,5	.75,3	.76,3	.74,9	.75,6	.80	.80,0
	{ Tien-Tsin tael.....				.72,7	.71,4	.69,2	.76,1	.76,2
	{ Chefoo tael.....				.71,7	.70,4	.68,3	.75,1	.75,2
Colombia.....	Silver peso.....	.51,6	.46,5	.45,7	.46,4	.45,5	.44,1	.48,6	.48,6
Ecuador.....	do.....	.51,6	.46,5	.45,7	.46,4	.45,5	.44,1	.48,6	.48,6
India.....	Silver rupee.....	.24,5	.22,1	.21,7	.22	.21,6	.21,0	.23,1	.23,1
Japan‡.....	Silver yen.....	.55,6	.50,1	.49,3	.50	.49,1	.47,6	.52,4	.52,4
Mexico.....	Silver dollar.....	.56	.50,5	.49,7	.50,4	.49,5	.47,9	.52,8	.52,8
Persia.....	Silver kran.....							.08,9	.09,0
Peru.....	Silver sol.....	.51,6	.46,5	.45,7	.46,4	.45,5	.44,1	.48,6	.48,6
Russia§.....	Silver ruble.....	.41,3	.37,2	.36,6	.37,1	.36,4	.35,3	.38,9	.38,9
Tripoli.....	Silver mahbub.....	.46,5	.41,9	.41,3	.41,8	.41,1	3.9,8	.43,8	.43,8

* Austria-Hungary had the silver standard up to August, 1892 (*see* note to "fluctuating" table B).

† China (silver). The Haikwan tael is the customs tael, and the Shanghai tael that used in trade. Consul-General Denny (CONSULAR REPORTS No. 43, p. 516) says: "The value of the tael varies in the different ports of China, and every port has two taels, one being the Government, or Haikwan, tael, in which all duties have to be paid, and the other the market tael, the former exceeding the latter by some 11 per cent."

‡ Gold is the nominal standard in Japan, but silver is practically the standard. The fixed value of the gold yen is 99.7 cents.

§ The gold ruble is valued at 77.2 cents. Silver is the nominal standard, but paper is the actual currency, and its depreciation is measured by the gold standard.

¶ The Venezuelan bolivar became fixed in value (19.3 cents) on January 1, 1892.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalent.
Almude.....	Portugal.....	4.422 gallons.
Ardeb.....	Egypt.....	7.6907 bushels.
Are.....	Metric.....	0.02471 acre.
Arabe.....	Paraguay.....	25 pounds.
Arratel or libra.....	Portugal.....	1.011 pounds.
Arroba (dry).....	Argentine Republic.....	25.3175 pounds.
Do.....	Brazil.....	32.38 pounds.
Do.....	Cuba.....	25.3664 pounds.
Do.....	Portugal.....	32.38 pounds.
Do.....	Spain.....	25.36 pounds.
Do.....	Venezuela.....	25.4024 pounds.
Arroba (liquid).....	Cuba, Spain, and Venezuela.....	4.263 gallons.
Arshine.....	Russia.....	28 inches.
Arshine (square).....	do.....	5.44 square feet.
Artel.....	Morocco.....	1.12 pounds.
Baril.....	Argentine Republic and Mexico.....	20.0787 gallons.
Barrel.....	Malta (customs).....	11.4 gallons.
Do.....	Spain (raisins).....	100 pounds.
Berkovet.....	Russia.....	361.12 pounds.
Bongkal.....	India.....	832 grains.
Bonw.....	Sumatra.....	7,096.5 square meters.
Bu.....	Japan.....	0.1 inch.
Butt (wine).....	Spain.....	140 gallons.
Caffiso.....	Malta.....	5.4 gallons.
Candy.....	India (Bombay).....	529 pounds.
Do.....	India (Madras).....	500 pounds.
Cantar.....	Morocco.....	113 pounds.
Do.....	Syria (Damascus).....	575 pounds.
Do.....	Turkey.....	124.7036 pounds.
Cantaro (Cantar).....	Malta.....	175 pounds.
Carga.....	Mexico and Salvador.....	300 pounds.
Catty.....	China.....	1.333½ (1½) pounds.
Do.....	Japan.....	1.31 pounds.
Do.....	Java, Siam, Malacca.....	1.35 pounds.
Do.....	Sumatra.....	2.12 pounds.
Centaro.....	Central America.....	4.2631 gallons.
Centner.....	Bremen and Brunswick.....	117.5 pounds.
Do.....	Darmstadt.....	110.24 pounds.
Do.....	Denmark and Norway.....	110.11 pounds.
Do.....	Nuremberg.....	112.43 pounds.
Do.....	Prussia.....	113.44 pounds.
Do.....	Sweden.....	93.7 pounds.
Do.....	Vienna.....	123.5 pounds.
Do.....	Zollverein.....	110.24 pounds.
Do.....	Double or metric.....	220.46 pounds.
Chih.....	China.....	14 inches.
Coyan.....	Sarawak.....	3.098 pounds.
Do.....	Siam (Koyan).....	2.667 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Cuadra.....	Argentine Republic.....	4.2 acres.
Do.....	Paraguay.....	78.9 yards.
Do.....	Paraguay (square).....	8.077 square feet.
Do.....	Uruguay.....	Nearly 2 acres.
Cubic meter.....	Metric.....	35.3 cubic feet.
Cwt. (hundredweight).....	British.....	112 pounds.
Dessiatine.....	Russia.....	2.6997 acres.
Do.....	Spain.....	1.599 bushels.
Drachme.....	Greece.....	Half ounce.
Dun.....	Japan.....	1 inch.
Egyptian weights and measures.....	(See CONSULAR REPORTS No. 144.)	
Fanega (dry).....	Central America.....	1.5745 bushels.
Do.....	Chile.....	2.575 bushels.
Do.....	Cuba.....	1.599 bushels.
Do.....	Mexico.....	1.54728 bushels.
Do.....	Morocco.....	Strike fanega, 70 lbs.; full fanega, 112 lbs.
Do.....	Uruguay (double).....	7.776 bushels.
Do.....	Uruguay (single).....	3.888 bushels.
Do.....	Venezuela.....	1.599 bushels.
Fanega (liquid).....	Spain.....	16 gallons.
Feddan.....	Egypt.....	1.03 acres.
Frail (raisins).....	Spain.....	50 pounds.
Frasco.....	Argentine Republic.....	2.5096 quarts.
Do.....	Mexico.....	2.5 quarts.
Fuder.....	Luxemburg.....	264.17 gallons.
Garnice.....	Russian Poland.....	0.88 gallon.
Gram.....	Metric.....	15.432 grains.
Hectare.....	.....do.....	2.471 acres.
Hectoliter:		
Dry.....	.....do.....	2.838 bushels.
Liquid.....	.....do.....	26.417 gallons.
Joch.....	Austria-Hungary.....	1.422 acres.
Ken.....	Japan.....	4 yards.
Kilogram (kilo).....	Metric.....	2.2046 pounds.
Kilometer.....	.....do.....	0.621376 mile.
Klafter.....	Russia.....	216 cubic feet.
Kota.....	Japan.....	5.13 bushels.
Korree.....	Russia.....	3.5 bushels.
Last.....	Belgium and Holland.....	85.134 bushels.
Do.....	England (dry malt).....	82.52 bushels.
Do.....	Germany.....	2 metric tons (4,480 pounds).
Do.....	Prussia.....	112.29 bushels.
Do.....	Russian Poland.....	11¾ bushels.
Do.....	Spain (salt).....	4.760 pounds.
League (land).....	Paraguay.....	4.633 acres.
Li.....	China.....	2.115 feet.
Libra (pound).....	Castilian.....	7.100 grains (troy).
Do.....	Argentine Republic.....	1.0127 pounds.
Do.....	Central America.....	1.043 pounds.
Do.....	Chile.....	1.014 pounds.
Do.....	Cuba.....	1.0161 pounds.
Do.....	Mexico.....	1.01465 pounds.
Do.....	Peru.....	1.0143 pounds.
Do.....	Portugal.....	1.011 pounds.
Do.....	Uruguay.....	1.0243 pounds.
Do.....	Venezuela.....	1.0161 pounds.
Liter.....	Metric.....	1.0567 quarts.
Livre (pound).....	Greece.....	1.1 pounds.
Do.....	Guiana.....	1.0791 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Load.....	England (timber).....	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 super- ficial feet.
Mansana	Costa Rica.....	1½ acres.
Marc.....	Bolivia.....	0.507 pound.
Maund.....	India.....	82½ pounds.
Meter.....	Metric	39.37 inches.
Mil.....	Denmark.....	4.68 miles
Do.....	Denmark (geographical).....	4.61 miles.
Morgen.....	Prussia.....	0.63 acre.
Oke.....	Egypt.....	2.7225 pounds.
Do.....	Greece.....	2.84 pounds.
Do.....	Hungary.....	3.0817 pounds.
Do.....	Turkey.....	2.85418 pounds.
Do.....	Hungary and Wallachia.....	2.5 pints.
Pic.....	Egypt.....	21¼ inches.
Pical.....	Borneo and Celebes.....	135.64 pounds.
Do.....	China, Japan, and Sumatra.....	133½ pounds.
Do.....	Java.....	135.1 pounds.
Do.....	Philippine Islands (hemp).....	139.45 pounds.
Do.....	Philippine Islands (sugar).....	140 pounds.
Pie.....	Argentine Republic.....	0.9478 foot.
Do.....	Castilian.....	0.91407 foot.
Pik.....	Turkey.....	27.9 inches.
Pood.....	Russia.....	36.118 pounds.
Pand (pound).....	Denmark and Sweden.....	1.102 pounds.
Quarter.....	Great Britain.....	8.252 bushels.
Do.....	London (coal).....	36 bushels.
Quintal.....	Argentine Republic.....	101.42 pounds.
Do.....	Brazil.....	130.06 pounds.
Do.....	Castile, Chile, Mexico, and Peru.....	101.61 pounds.
Do.....	Greece.....	123.2 pounds.
Do.....	Newfoundland (fish).....	112 pounds.
Do.....	Paraguay.....	100 pounds.
Do.....	Syria.....	125 pounds.
Do.....	Metric.....	220.46 pounds.
Route.....	Palestine.....	6 pounds.
Do.....	Syria.....	5½ pounds.
Sagen.....	Russia.....	7 feet.
Salm.....	Malta.....	490 pounds.
Se.....	Japan.....	3.6 feet.
Seer.....	India.....	1 pound 13 ounces.
Shaku.....	Japan.....	10 inches.
Sbo.....	do.....	1.6 quarts.
Standard (St. Petersburg).....	Lumber measure.....	165 cubic feet.
Stone.....	British.....	14 pounds.
Suerte.....	Uruguay.....	2,700 cuadras (<i>see</i> cua- dra).
Tael.....	Cochin China.....	590.75 grains (troy).
Tan.....	Japan.....	0.25 acre.
To.....	do.....	2 pecks.
Ton.....	Space measure.....	40 cubic feet.
Tonde (cereals).....	Denmark.....	3.94783 bushels.
Tondeland.....	do.....	1.36 acres.
Tsubo.....	Japan.....	6 feet square.
Tsun.....	China.....	2.41 inches.
Tunna.....	Sweden.....	4.5 bushels.
Tunmland.....	do.....	1.22 acres.
Vara.....	Argentine Republic.....	34.1208 inches.
Do.....	Castile.....	0.914117 yard.
Do.....	Central America.....	38.874 inches.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Vara.....	Chile and Peru	33.367 inches.
Do.....	Cuba.....	33.384 inches.
Do.....	Curaçao.....	33.375 inches.
Do.....	Mexico.....	33 inches.
Do.....	Paraguay.....	34 inches.
Do.....	Venezuela.....	33.384 inches.
Vedro.....	Russia.....	2.707 gallons.
Vergees.....	Isle of Jersey.....	71.1 square rods.
Verst.....	Russia.....	0.663 mile.
Vlocka.....	Russian Poland.....	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
 Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
 Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
 Gram equals 15.432 grains.
 Decagram (10 grams) equals 0.3527 ounce.
 Hectogram (100 grams) equals 3.5274 ounces.
 Kilogram (1,000 grams) equals 2.2046 pounds.
 Myriagram (10,000 grams) equals 22.046 pounds.
 Quintal (100,000 grams) equals 220.46 pounds.
 Millier or tonne—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
 Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
 Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
 Liter equals 0.908 quart.
 Decaliter (10 liters) equals 9.08 quarts.
 Hectoliter (100 liters) equals 2.838 bushels.
 Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
 Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
 Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
 Liter equals 1.0567 quarts.
 Decaliter (10 liters) equals 2.6418 gallons.
 Hectoliter (100 liters) equals 26.418 gallon.
 Kiloliter (1000 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
 Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
 Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
 Meter equals 39.37 inches.

Decameter (10 meters) equals 393.7 inches.

Hectometer (100 meters) equals 328 feet 1 inch.

Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).

Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.

Are (100 square meters) equals 119.6 square yards.

Hectare (10,000 square meters) equals 2.471 acres.

CONSULAR REPORTS.

COMMERCE, MANUFACTURES, ETC.

VOL. L.

JANUARY, 1896.

No. 184.

EXPORTS DECLARED FOR THE UNITED STATES.

QUARTER ENDING SEPTEMBER 30, 1895.

ALGERIA.

Algiers.

Fish (salted).....	\$464.93
Goatskins.....	66,357.41
Wool.....	802.03
All others.....	155.62
Total.....	67,779.99

Beni-saf.

Iron ore.....	5,685.68
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Bone.

Iron ore.....	6,297.65
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Oran.

African fiber.....	17,628.05
Goatskins.....	6,188.43
Total.....	23,816.48
Total for Algeria.....	103,579.80

AUSTRALASIA.

Auckland.

Ferns and plants.....	118.00
Gum (kauri).....	266,289.00
Hides (ox).....	3,300.00
Mutton casings.....	520.00
Pelts.....	1,148.00
Wool.....	376.00
Total.....	271,751.00

Christ Church, N. Z.

Pelts.....	\$4,815.20
Photographic lens.....	140.00
Sheep's casings.....	27,568.23
Tag fasteners.....	291.99
Total.....	32,815.42

Dunedin, N. Z.

Sheep pelts (salted).....	21,049.00
Rabbit skins.....	9,863.00
Sheepskins.....	31,179.00
Perennial rye grass seed and cocksfoot grass seed.....	355.00
Mutton tallow.....	698.00
Total.....	63,144.00

Newcastle, N. S. W.

Coal.....	154,563.75
Shale.....	270.20
Tobacco.....	173.85
Total.....	155,007.80

Sydney, N. S. W.

Kangaroo and other skins.....	525,755.00
Hides.....	107,315.00
Tin.....	119,280.00
Coal.....	6,270.00
Wool.....	20,720.00
Returned goods.....	5,875.00
Sundries.....	11,080.00
Total.....	796,295.00

Wellington, N. Z.

Sheep's casings.....	\$20,494.00
Sheep's skins and pelts.....	72.75
Antimony.....	880.00
New Zealand hemp.....	5,547.81
Total.....	26,994.56

AUSTRIA-HUNGARY.

Brunn.

Baskets and basket ware.....	1,444.41
Buttons.....	2,624.94
Carpets.....	70.52
Cloth and woolen goods.....	8,653.24
Cotton goods.....	14,521.44
Drugs and chemicals.....	20,321.25
Furniture.....	17,096.39
Glassware.....	1,366.70
Gloves.....	20,518.26
Graphite.....	5,054.73
Hats and caps (fez).....	138.95
Linen goods.....	44,970.64
Wooden ware.....	2,048.54
All other.....	124.10
Total.....	138,954.11

Budapest.

Beans.....	15,322.56
Books.....	1,558.90
Brandy.....	113.25
Furniture.....	665.78
Glassware.....	6,070.09
Glue.....	996.83
Herbs, roots, and leaves.....	1,368.16
Household goods.....	2,030.00
Linen.....	99.79
Majolica.....	2,130.30
Mineral water.....	25,104.10
Meerschbaum.....	264.71
Oil of juniper berries.....	237.67
Oakum.....	631.39
Paint.....	202.19
Painted matter.....	121.80
Red pepper.....	133.89
Seed (esparcet).....	799.19
Sulphite wood pulp.....	5,496.65
Umbrella sticks.....	1,224.00
Wines and liquors.....	7,596.65
Total.....	72,167.92

Fiume.

Skins.....	2,498.87
Wines and liquors.....	495.14
Total.....	2,994.01

Haida.

Art, works of.....	112.64
Artificial flowers.....	3,607.46
Buttons.....	13,250.59
Cutlery.....	6,615.45
Glassware.....	197,299.47
Jewelry.....	1,015.73

Metal ware.....	\$2,253.06
Musical instruments.....	1,609.16
Oils, paints, and colors.....	438.38
Porcelain and pottery.....	95,993.17
Smokers' articles.....	53.73
Sparterie.....	1,378.02
Toys.....	1,379.18
Velveteen.....	2,042.74
Wooden goods.....	297.60
Miscellaneous.....	13.89
Total.....	329,360.27

Innsbruck.

Stained glass.....	2,547.24
Wooden ware.....	423.92
Total.....	2,971.16

Prague.

Beans and lentils.....	5,476.29
Bed feathers.....	87,222.43
Beer.....	32,157.20
Beet-root sugar.....	119,527.48
Books.....	3,639.71
Buttons.....	5,495.12
Carlsbad Sprudel salt.....	23,271.92
Clay.....	889.48
Cloth and woolen goods.....	4,164.76
Cotton goods.....	810.53
Drugs and chemicals.....	8,927.04
Embroideries.....	316.68
Fez caps.....	1,227.41
Fruits, dried.....	2,090.90
Furniture.....	1,388.64
Glassware.....	78,629.02
Gloves.....	139,884.38
Graphite.....	2,287.64
Gum.....	2,750.07
Hair (human).....	7,211.83
Jewelry.....	2,023.19
Leather and skins.....	1,186.30
Linen goods.....	8,891.92
Metal ware.....	3,463.94
Mineral water.....	8,280.59
Musical instruments.....	15,997.07
Oil paintings.....	1,752.28
Paper goods.....	2,890.22
Porcelain pottery.....	177,924.46
Potash.....	13,428.81
Skeletons.....	700.35
Substitutes for coffee.....	1,186.84
Sundries.....	807.32
Toys.....	2,976.56
Velvets.....	1,242.30
Wines and liquors.....	1,273.29
Wood pulp.....	4,383.78
Wool grease.....	518.28
Total.....	776,359.03

Reichenberg.

Art, works of.....	282.23
Artificial flowers.....	104.74
Beads.....	10,338.56
Buttons.....	34,111.85

Cotton goods.....	\$2,418.07
Glassware.....	53,781.43
Jewelry.....	128,928.54
Linen ware.....	87,477.24
Metal ware.....	622.41
Musical instruments.....	269.18
Paper goods.....	1,012.88
Porcelain pottery.....	5,357.03
Smokers' articles.....	43.02
Toys.....	600.45
Woolen goods.....	4,127.33
Total.....	329,474.96

Vienna.

Albumen.....	2,475.28
Art, works of.....	12,342.28
Artificial flowers.....	3,674.95
Baskets and basket ware.....	5,659.49
Beans.....	11,674.82
Beer.....	1,447.13
Books and papers.....	2,477.20
Brushes.....	2,692.29
Buttons.....	65,240.01
Carbons.....	4,622.85
Carpets.....	1,192.48
Cloth and woolen goods.....	31,808.79
Haircloth.....	12,112.72
Cotton goods.....	5,290.02
Drugs and chemicals.....	7,183.47
Fans.....	33,833.87
Felt.....	524.70
Fur.....	4,343.33
Furniture.....	5,319.72
Glassware.....	35,680.53
Gloves.....	10,131.41
Hats and caps (fez).....	10,911.74
Jet trimmings.....	559.55
Leather and skins.....	6,077.98
Leather goods.....	13,225.34
Linen goods.....	9,261.15
Machines and parts of.....	606.62
Magnesite.....	12,733.25
Matches.....	483.94
Meerscham, crude.....	7,338.36
Metal ware.....	37,037.64
Musical instruments.....	1,723.36
Ozocerite and ceresin.....	3,643.60
Paper goods.....	2,379.59
Porcelain and pottery.....	26,656.48
Palp.....	2,336.16
Scientific instruments.....	3,459.51
Shell and bone ware.....	6,792.08
Silk goods.....	51,469.67
Smokers' articles.....	19,477.70
Soap and perfumery.....	1,266.46
Toys.....	4,518.14
Umbrella fixtures and sticks.....	28,963.49
Wax figures.....	1,702.64
Wines and liquors.....	3,860.44
Wooden ware.....	6,631.36
Miscellaneous.....	3,485.47
Total.....	526,329.08

BELGIUM.*Antwerp.*

Bleaching powder.....	\$1,218.14
Books.....	11,052.95
Bric-a-brac.....	594.34
Canvas.....	577.20
Cement.....	99,452.90
Chicory.....	6,668.68
Coke.....	5,486.96
Diamonds.....	377,812.67
Elephants.....	4,342.50
Feathers (bed).....	17,318.65
Flax.....	7,150.43
Furniture.....	2,747.49
Gin.....	633.69
Glass.....	2,994.97
Glycerin.....	3,802.33
Hair (animal).....	18,127.57
Hides.....	91,771.93
Horns.....	1,401.13
India rubber.....	22,218.98
Iron.....	6,109.02
Ivory.....	3,564.31
Lead.....	279,378.99
Linen.....	6,353.43
Linoleum.....	4,709.52
Matches.....	683.07
Meat extract.....	50,744.12
Oil.....	373.86
Paintings.....	8,268.12
Paper.....	14,605.85
Pease.....	493.06
Pearls.....	3,508.03
Phosphates.....	4,046.49
Pitch.....	372.42
Potash.....	9,048.23
Rags.....	16,223.36
Rope.....	199.81
Sardines.....	15,083.80
Seeds.....	836.59
Silverware.....	634.00
Soda.....	10,752.16
Steel rods and beams.....	22,747.35
Wire (copper).....	1,037.37
Wool.....	258,597.09
Grease.....	6,123.34
Sundries.....	2,713.03
Total.....	1,402,611.95

Brussels.

Aniline colors.....	1,147.58
Braids and button stock.....	788.44
Braids (hat beads) and jet on wire.....	3,942.13
Carpets.....	345.53
Cement.....	187,324.38
Coke.....	4,676.27
Corsets.....	78,536.53
Diamonds.....	406.46
Earthenware.....	1,125.47
Fur, refuse of.....	1,015.22
Glass:	
Plate.....	201,634.70
Window.....	17,295.72

Gloves.....	\$186,995.89
Glue and glue stock.....	1,151.62
Hair (animal).....	819.53
Hatters' fur.....	45,362.02
Household and personal effects.....	2,161.60
Lace goods.....	48,129.08
Leather (hatbands).....	6,469.63
Linen goods.....	94,940.25
Machinery.....	121.30
Marble.....	184.50
Marble and granite.....	163.25
Musical instruments.....	2,614.15
Naphthalene.....	322.20
Oil paintings.....	756.24
Paper and books.....	4,479.52
Phosphates.....	9,182.74
Rags and paper stock.....	5,792.53
Skins (rabbit, sheep, and other).....	77,893.65
Soda, prussiate of.....	2,982.33
Stones:	
Ground flint.....	249.65
Paving.....	823.72
Vegetable fibers (flax, hemp, and tow).....	6,294.41
Vegetables, preserved.....	16,922.45
Woolen goods.....	956.53
Sundries.....	9,953.09
Total.....	1,023,960.31

Charleroi.

Cement.....	9,173.96
Glass:	
Fancy.....	1,736.27
Plate.....	42,258.52
Window.....	196,184.83
Marble.....	5,867.88
Wool, washed.....	30,675.42
Sundries.....	3,654.48
Total.....	289,551.36

Ghent.

Cement.....	17,029.02
Chicory:	
Granulated.....	1,103.60
Root.....	67,117.91
Cordage.....	443.34
Glass (art stained).....	498.61
Hatters' fur.....	21,683.68
Jet trimmings.....	921.90
Lace.....	4,711.83
Laces, shoe.....	661.42
Linen goods.....	33,026.18
Matches.....	138.73
Oil.....	433.90
Plants.....	47,037.20
Powder, smokeless.....	8,148.88
Rags and paper stock.....	83,169.51
Skins (rabbit).....	47,387.29
Thread.....	852.91
Vegetable fibers (flax and tow).....	57,280.47
Yarns (crochet cotton).....	387.15
Sundries.....	124.69
Total.....	397,158.22

Liege.

Car wheels.....	\$3,735.41
Firearms.....	259,285.71
Glassware.....	37,074.45
Indigo, auxiliary.....	1,854.43
Lamp fixtures.....	898.91
Lead.....	104,680.38
Paper.....	1,906.77
Straw goods.....	9,437.66
Superphosphate.....	12,857.39
Zinc.....	5,862.56
Miscellaneous.....	240.29
Total.....	437,833.96

Verriers.

Card clothing.....	51.33
Fancy goods.....	1,509.46
Hones.....	5,739.68
Machinery.....	437.14
Potash.....	173.08
Salted sheepskins.....	24,196.79
Wool.....	397,871.16
Woolens:	
Goods.....	162,667.61
Yarn.....	5,243.74
Various.....	1,327.02
Total.....	599,217.01

BRAZIL.*Bahia.*

Brazil wood.....	695.66
Cocoa.....	16,805.00
Coffee.....	178,113.45
Goncalis alves (wood).....	261.28
India rubber.....	21,355.02
Ostrich feathers.....	294.86
Piassava.....	956.90
Rosewood.....	860.58
Skins.....	61,738.44
Sugar.....	67,802.06
Total.....	348,883.25

Ceara.

Dry hides.....	11,012.75
Feathers.....	2,641.05
Skins.....	137,025.81
Wax.....	80,248.47
Total.....	230,928.08

Pernambuco.

Hides, dry salted.....	16,222.12
Skins, sheep and goat.....	401,254.01
Sugar.....	36,081.85
Total.....	453,557.98

Porto Alegre.

Hair.....	2,888.28
Hides:	
Wet salted.....	14,717.53
Dry.....	28,358.24
Total.....	45,964.05

Rio Grande do Sul.

Glue stock.....	\$15,408.12
Hair.....	26,597.62
Hides:	
Dry.....	129,582.15
Salted.....	7,791.42
Horns.....	714.37
Shinbones.....	335.32
Sounds.....	2,153.10
Total.....	182,582.10

BRITISH ASIA.

Bombay.

Indian condiments.....	836.58
Indian curios.....	227.32
Woolen carpets and furniture.....	354.38
Mustard seed.....	8,305.59
Carpets.....	7,816.94
Woodwork and brass chains.....	1,518.88
Mace.....	902.77
Copper and brass, etc.....	1,028.39
Brass ware and cotton piece goods.....	404.08
Methey seed.....	276.56
Cuscus root and fulcaries skirts.....	298.97
Bombay carved furniture.....	530.57
Brass ware.....	424.37
Wooden ware, wool and cotton stuffs, and woolen carpets.....	660.70
Jewelry.....	154.92
Woodwork.....	156.57
Cotton rugs and brass ware.....	361.96
Woolen furniture and pottery and woolen carpets.....	884.45
Merchandise.....	500.82
Brass ware.....	623.51
Persian huegda.....	1,246.27
Agra stoneware.....	150.79
Woodwork and brass chains.....	155.23
Colored cotton waste.....	147.69
Copper and papier-maché.....	389.78
Cotton prints, phulcaries.....	216.31
Chutaies.....	432.23
Books, etc.....	257.81
Total.....	28,960.82

Calcutta.

Drugs.....	342,192.25
Fishing rods.....	1,132.75
Gunny:	
Bags.....	107,240.00
Cloth.....	483,794.75
Hides.....	315,469.50
Jute.....	20,844.00
Butts and rejections.....	55,898.50
Linseed.....	115,798.00
Mica.....	21,101.00
Paper stock.....	4,806.00
Rubber.....	9,784.00
Saltpeter.....	75,813.00
Skins.....	855,669.00
Tea.....	24,315.00
Wool.....	378.50

Woolen goods.....	\$237.00
Miscellaneous.....	889.00
Total.....	2,436,362.25

Ceylon.

Cinchona.....	4,040.00
Cinnamon.....	6,388.00
Citronella oil.....	17,460.00
Cocoa.....	4,604.00
Cocoanuts:	
Desiccated.....	15,680.00
Oil.....	284,972.00
Coffee.....	1,727.00
Coir (yarn).....	3,574.00
Medicinal seeds.....	540.00
Plumbago.....	168,682.00
Tea.....	29,871.00
Total.....	537,478.00

Penang.

Mace.....	5,344.36
Pepper:	
Black.....	5,900.47
White.....	4,257.44
Nutmegs.....	21,243.98
Rubber (Borneo).....	204.36
Tapioca.....	2,954.33
Tin.....	571,917.92
Total.....	611,822.86

Singapore.

Banda shells.....	537.41
Coffee.....	340,756.11
Cassia.....	182.45
Cubeba.....	5,596.18
Curios, native weapons, etc.....	1,054.76
Gambier.....	358,621.01
Gum:	
Copal.....	47,698.37
Dammar.....	3,088.96
Gutta-percha.....	16,968.05
Hides:	
Buffalo.....	4,037.77
Deer.....	281.51
Malacca canes.....	501.97
Mace.....	861.62
Nutmegs.....	13,157.21
Orchids.....	259.75
Pepper:	
Black.....	111,992.49
White.....	500.01
Long.....	820.43
Pineapples, preserved.....	2,091.74
Rattans.....	56,870.27
Rubber.....	36,415.43
Sago.....	20,088.13
Tapioca.....	43,698.66
Tin.....	889,490.72
Tortoise shell.....	3,147.31
Wild animals.....	1,857.50
Total.....	1,960,575.82

BRITISH GUIANA.

Demerara.

Sugar.....	\$366,982.61
Cocoa.....	898.70
Metals.....	60.89
Sewing machines and shirts (returned).....	132.00
Rum.....	31.80
Timber.....	173.20
Total.....	368,279.20

BRITISH SOUTH AFRICA.

Cape Town.

Effects, personal.....	65.69
Feathers (ostrich).....	32,503.23
Lobsters, preserved.....	1,023.24
Wool:	
Grease.....	78,311.33
Scoured.....	22,238.52
Whips, riding.....	9.73
Total.....	134,151.74

East London.

Curios (small animal, reptile, and bird skins).....	26.98
Hides, dry.....	1,719.79
Skins:	
Angora.....	37.10
Goat.....	474.48
Sheep.....	532.54
Wool in grease.....	11,048.45
Total.....	13,839.34

Port Elizabeth..

Feathers (ostrich).....	832.17
Mohair.....	4,592.73
Skins.....	35,894.31
Wool.....	340,098.40
Total.....	381,417.61

BRITISH WEST INDIES.

Abaco (Bahamas).

Pine slips.....	550.50
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Albert Town (Bahamas).

Salt.....	1,800.00
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Barbados.

Preserves.....	11.76
Tamarinds.....	306.65
Sugar.....	424,219.20
Total.....	424,537.61

Cockburn Harbor.

Salt.....	19,618.77
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Dunmore Town (Bahamas).

Pineapples.....	1,245.76
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Governor's Harbor (Bahamas).

Pineapples.....	\$13,742.44
Pineapple slips.....	420.00
Salt.....	150.00
Total.....	14,312.44

Hamilton (Bermuda).

Arrowroot.....	250.07
Lily bulbs.....	92,628.68
Barrels, empty.....	263.83
Hides.....	1,834.45
Old copper.....	351.86
Old household linen.....	103.58
Total.....	95,432.47

Mathewtown (Bahamas).

Coffee.....	1,254.90
Sponge.....	544.80
Sisal.....	1,215.14
Logwood.....	61.50
Total.....	3,076.34

Montserrat.

Phosphate rock from Bedonda Island..	4,643.50
Muscovado sugar.....	6,630.94
Total.....	11,274.44

Nassau, N. P.

Bark.....	861.10
Pineapples (canned).....	29,708.15
Sisal or hemp.....	381.00
Skins and hides.....	355.05
Sponges.....	57,066.05
Sundries.....	911.45
Wood (cabinet and dye).....	855.04
Total.....	90,137.84

St. Christopher.

Sugar.....	45,756.44
Molasses.....	5,776.56
Skins.....	1,187.00
Green limes.....	40.00
Old bell metal.....	20.20
Total.....	52,780.20

St. George's (Bermuda).

Lumber (returned to United States)...	960.00
Lily bulbs.....	6,764.60
Palm leaves.....	48.00
Resin (returned to United States).....	3,908.71
Rape-seed oil (returned to United States).....	22.18
Total.....	11,703.49

St. Vincent.

Annotto seed.....	31.46
Arrowroot.....	602.89
Spices.....	4.03
Sugar (muscovado).....	29,094.38
Total.....	29,732.76

Salt Cay.

Salt in bulk..... \$8,524.19

Turks Island.

Sponges..... 740.51
 Bahama hemp..... 979.16
 Salt..... 528.13
 Total..... 2,247.80

CANADA.

BRITISH COLUMBIA.

Nanaimo.

Coal..... 352,844.25
 Hides..... 578.75
 Household effects..... 100.00
 Logs (fir)..... 3,200.00
 Ore (gold)..... 200.00
 Wool..... 289.00
 Total..... 357,212.00

Vancouver.

Bone dust..... 927.00
 Bullion..... 73,496.00
 Coal..... 133,737.00
 Fish, fresh..... 14,287.00
 Furs..... 467.00
 Hides..... 8,621.00
 Liquors..... 1,735.00
 Lumber..... 26,924.00
 Merchandise..... 1,834.00
 Ore:
 Galena..... 135,953.00
 Copper..... 6,522.00
 Gold..... 5,430.00
 Products returned to United States..... 2,022.00
 Shingles..... 14,108.00
 Timber..... 7,765.00
 Wool..... 9,301.00
 Total..... 443,129.00

Victoria.

Blankets..... 507.00
 Fresh fish..... 2,165.00
 Furs, hides, and skins..... 71,652.46
 Gold bullion..... 86,268.52
 Groceries..... 320.66
 Household goods and personal effects..... 1,396.00
 Horses..... 1,500.00
 Junk..... 502.50
 Liquors..... 3,217.78
 Muriatic acid..... 136.60
 Oat hulls..... 144.00
 Returned American goods..... 2,779.25
 Tobacco..... 2,851.00
 Wool..... 12,803.93
 Miscellaneous merchandise..... 177.38
 Total..... 186,422.08

MANITOBA.

Deloraine.

Stallions..... 350.00

Emerson.

American goods returned (glass ornaments)..... \$166.00
 Horses..... 120.00
 Hides..... 33.71
 Pelts (sheep)..... 23.55
 Seneca root..... 364.80
 Wool..... 16.43
 Total..... 724.49

Gretna.

Emigrants' effects..... 855.00
 Horses..... 280.00
 Total..... 1,135.00

North Portal (Assiniboia.)

Raw furs..... 20,560.15
 Raw hides..... 1,389.67
 Seneca root..... 1,143.97
 Wool..... 3,171.00
 Total..... 26,264.79

Winnipeg and Lethbridge.

Fresh fish..... 10,832.19
 Personal effects..... 8,885.00
 Raw furs..... 5,432.00
 Raw hides..... 9,905.03
 Seneca root..... 34,305.28
 Empty barrels returned..... 2,899.50
 Machinery..... 1,130.00
 Hardware..... 29.62
 Horns:
 Rough..... 252.50
 Mounted..... 76.00
 Wool..... 1,842.50
 Breeding animals..... 527.50
 Safe lock..... 202.50
 Bones..... 122.40
 Total..... 76,442.02

NEW BRUNSWICK.

Bathurst.

Animals (horses)..... 117.50
 Lobsters and codfish..... 1,476.00
 Grindstones..... 9,265.00
 Laths and shingles..... 20,520.70
 Total..... 31,388.20

Campbellton.

Wood:
 Cedar shingles..... 64,105.75
 Cedar railway ties..... 969.76
 Spruce clapboards..... 702.49
 Canned lobsters..... 16,664.70
 Canned blueberries..... 2,259.30
 Raw furs..... 526.60
 Household effects..... 80.00
 Total..... 85,308.60

Campobello Island.

Boat.....	\$125.00
Eggs.....	6.00
Fish:	
Oil.....	700.00
Smoked.....	905.70
Fruit:	
Apples.....	212.00
Potatoes.....	5.25
Wood (fire).....	8.00
Total.....	1,961.95

Fredericton.

Animals (horses).....	646.00
Bark.....	5,692.50
Berries, canned.....	237.43
Bicycle.....	120.00
Cotton waste.....	552.65
Emigrants' effects.....	3,717.00
Hides and skins.....	418.65
Laths and lumber.....	79,553.35
Machinery.....	952.50
Ships' knees.....	91.00
Total.....	91,271.08

Grand Manan.

Fish:	
Dried.....	470.25
Oil.....	950.00
Smoked.....	6,769.55
Total.....	8,189.80

McAdam Junction.

Blocks (last).....	194.00
Coal.....	4,710.00
Hoops.....	672.00
Household goods.....	18.00
Lambs.....	786.90
Sheep.....	28.50
Ties (railway).....	750.00
Total.....	7,159.40

Moncton.

Animals (horse).....	45.00
Clays (terra alba).....	1,681.56
Fish (canned lobsters).....	8,206.00
Hay.....	325.49
Minerals:	
Calced plaster.....	9,695.25
Rock plaster.....	31,731.74
Rock wall plaster.....	300.00
Manganese.....	260.00
Personal effects.....	3,889.00
Wood:	
Boards, planks, etc.....	28,870.54
Hemlock bark.....	11,325.00
Fire and kiln wood.....	420.00
Laths.....	4,555.58
Piling.....	350.00
Railway ties.....	2,693.00
Wool (undressed).....	440.20
Total.....	104,743.81

Newcastle.

Fish (canned lobsters).....	\$15,115.34
Fruit (canned blueberries).....	9,482.73
Hemlock (extract).....	1,078.32
Wood:	
Ships' knees.....	1,884.85
Long lumber.....	1,564.50
Short lumber.....	18,017.67
Wood (pulp).....	10,557.03
Total.....	57,700.44

Richibucto.

Sawed lumber.....	2,080.00
Hemlock bark.....	1,500.00
Fresh mackerel.....	2,520.00
Emigrants' effects.....	50.00
Total.....	6,150.00

St. Andrews.

Furniture.....	9.00
Tin.....	445.25
Turnips.....	1,276.00
Wood (kiln).....	83.50
Total.....	1,813.75

St. George.

Laths and lumber.....	5,186.00
Granite.....	609.62
Firewood.....	90.00
Total.....	5,885.62

St. John.

Animals (horses).....	4,760.50
Bark.....	285.00
Berries (canned).....	112.50
Books.....	100.00
Chemical preparations.....	107.50
Emigrants' effects.....	8,363.00
Fish:	
Canned.....	887.00
Fresh.....	1,390.00
Oil.....	699.75
Pickled.....	13,171.75
Fruit (apples).....	263.75
Hides and skins.....	4,076.65
Iron, manufactures of.....	472.50
Junk.....	2,000.52
Laths and lumber.....	475,538.15
Minerals:	
Cement.....	343.00
Lime.....	4,768.83
Returned goods.....	5,181.03
Salt.....	317.08
Sundries.....	218.50
Tea.....	496.59
Tin plates.....	140.00
Whisky.....	112.30
Wood (fire).....	15,199.00
Wool.....	15,528.94
Total.....	554,533.14

St. Stephen.

Agricultural products:	
Beans.....	\$339.00
Turnips.....	424.00
Animals (horses).....	180.00
Emigrants' effects.....	5,856.00
Fish:	
Dry.....	420.00
Pickled.....	192.00
Smoked.....	89.00
Furs, hides, and skins.....	2,998.00
Goods returned to United States.....	260.00
Molasses.....	3,082.00
Peat moss.....	210.00
Tea.....	265.00
Wood:	
Laths.....	1,932.00
Lumber.....	49,466.00
Wool.....	1,440.00
Total.....	67,393.00

NOVA SCOTIA.

Arichat.

Food fish, dry.....	82.50
Herring, pickled.....	271.00
Mackerel, pickled.....	857.50
Total.....	1,211.00

Annapolis.

Apples.....	4,766.80
Cord wood.....	5,728.69
Horses.....	125.00
Lath.....	30.65
Lumber.....	7,502.88
Piling.....	4,093.05
Pulp wood.....	910.00
Total.....	23,157.07

Barrington.

Live lobsters.....	402.50
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Cape Canso.

Canned lobsters.....	704.00
Ice-d halibut.....	250.00
Fetched halibut.....	48.00
Dry codfish.....	742.00
Canned strawberries.....	6.00
Live lobsters.....	350.00
Pickled mackerel.....	2,226.00
Pickled herring.....	527.00
Tongues and sounds.....	32.50
Cod oil.....	522.00
Total.....	5,507.50

Digby.

Bark.....	3,689.00
Barrels.....	36.00
Codfish.....	3,562.00
Eggs.....	80.00
Hake sounds.....	92.00
Horses.....	113.00
Junk.....	2.00

Lumber.....	\$25,308.00
Lobsters.....	330.00
Canned.....	218.00
Lath.....	147.00
Piling.....	4,262.00
Pulp wood.....	1,606.00
Pollock.....	3,796.00
Potatoes.....	4.00
Spars.....	100.00
Wood (fire).....	10,896.00
Total.....	54,332.00

Magdalen Islands.

Fat mackerel.....	18,849.15
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Pictou.

Cloth and woolen goods.....	455.80
Emigrants' effects.....	491.00
Fish:	
Canned.....	29,581.49
Fresh.....	588.31
Pickled.....	26,509.80
Sounds.....	66.75
Leather (damaged).....	250.05
Wool.....	726.31
Total.....	58,669.51

Port Hawksbury and Mulgrave.

Cod oil.....	10.00
Emigrants' effects.....	20.00
Herring, pickled.....	195.00
Horses.....	61.00
Lobsters, canned.....	1,111.65
Mackerel.....	34,995.20
Railroad ties.....	933.82
Salmon.....	19.50
Ships' knees (juniper).....	755.00
Total.....	38,101.17

Pugwash and Wallace.

Lambs.....	396.70
Household effects.....	477.00
Canned lobsters.....	3,288.00
Stone.....	1,476.50
Hay.....	87.50
Total.....	5,725.70

Shelburne.

Codfish.....	410.48
Lumber:	
Pine.....	1,127.63
Spruce.....	1,396.18
Total.....	2,934.29

Sydney.

Coal.....	43,607.40
Lump gypsum.....	7,905.67
Lobsters and fish.....	8,886.00
Hides and skins.....	858.00
Emigrants' effects.....	1,080.50
Mining transit.....	237.50
Total.....	62,575.07

Windsor.

Animal (horse).....	\$65.00
Coal, culm of.....	5,154.00
Fruit, fresh:	
Apples.....	4,602.00
Strawberries.....	2,000.00
Grindstones.....	2,380.00
Gypsum, or plaster of paris.....	57,948.00
Calcined.....	802.00
Hides and skins.....	153.00
Household effects.....	665.00
Manganese ore.....	1,248.00
Sand, molding.....	678.00
Wood and manufactures:	
Firewood.....	2,397.00
Laths.....	9,803.00
Lumber, sawn.....	54,902.00
Piling, or timber for piles.....	25,775.00
Ships' knees.....	300.00
Total.....	168,872.00

Yarmouth.

Blueberries.....	6,687.40
Strawberries.....	1,723.50
Bark (hemlock).....	702.50
Emigrants' effects.....	750.00
Fish:	
Fresh—	
Halibut.....	3,464.35
Lobsters.....	3,087.50
Canned.....	1,014.00
Salt—	
Cod.....	2,430.97
Herring.....	2,585.25
Fishhooks.....	111.50
Fuel.....	90.00
Returned American manufactured goods (glass tubes).....	173.64
Hides and skins.....	921.50
Lumber:	
Piling.....	517.50
Scantling.....	1,350.50
Shingles.....	1,600.00
Spruce.....	4,499.18
Mixed.....	2,259.74
Salt.....	2,509.35
Total.....	36,478.38

ONTARIO.

Amherstburg.

Emigrants' effects.....	1,180.00
Horses.....	4,000.00
Logs.....	920.00
Lumber.....	3,110.79
Sand.....	400.00
Staves.....	23,569.54
Total.....	33,120.33

Barrie.

Alsike.....	2,608.00
Lambs.....	1,890.00
Laths and shingles (mixed).....	82.00

Lumber:

Pine.....	\$5,076.70
Ash and bass.....	400.00
Settlers' effects.....	425.00
Shingles:	
Cedar.....	447.00
Pine.....	7,258.79
Total.....	18,187.49

Belleville.

Actinolite ore (ground).....	1,120.00
Ashes (leached).....	350.00
Emigrants' effects.....	2,840.00
Hides and skins.....	3,505.75
Lumber.....	600.00
United States products returned.....	80.00
Wool.....	1,785.00
Total.....	10,280.75

Brockville.

Emigrants' effects.....	7,225.00
Hides.....	26,667.12
Horses.....	50.00
Laths and shingles.....	2,258.85
Logs.....	383.78
Lumber.....	20,788.36
United States products returned.....	100.00
Wool.....	1,153.00
All other articles.....	3,100.88
Total.....	61,626.99

Carleton Place.

Emigrants' effects.....	640.00
Hides and skins.....	850.00
Laths and shingles.....	220.29
Logs and timber.....	1,587.26
Lumber.....	132,356.61
In bond for export.....	1,518.76
Mica.....	2,221.26
Returned United States products.....	291.60
Wood (pulp).....	576.00
Wool.....	2,986.55
Total.....	143,948.33

Chatham.

Beans.....	16,108.49
Bran.....	814.50
Eggs.....	764.00
Hides.....	7,519.60
Horses.....	875.00
Logs.....	16,800.00
Lumber.....	3,157.20
Settlers' effects.....	4,791.50
Staves and bolts.....	60,848.22
Returned United States products.....	8.80
Wool.....	15,442.29
Miscellaneous.....	460.62
Total.....	127,590.22

Clifton.

Horses.....	7,897.50
Clematis plants.....	500.00
Emigrants' effects.....	1,510.00

Fire extinguishers.....	\$120.00
Spar wood.....	383.41
Paper.....	138.20
Picture frames, etc.....	5,134.00
Paper bags.....	119.00
Oak lumber.....	272.00
Whisky.....	145.00
Scrap (german silver and steel scrap and brass).....	1,366.49
Assorted goods.....	116.72
Buggies, harness, blankets, etc.....	1,155.00
Dogs.....	5,500.00
Rails.....	133.57
Ties.....	72.75
Musk ox, mounted.....	185.83
Colt grain.....	18.30

Total..... 24,767.77

Clinton.

Flax.....	10,165.40
Household goods.....	180.00
Horses.....	275.00
Lambs.....	2,927.25
Paper stock.....	177.82
Poultry.....	1,471.25
Tow.....	194.75
Wool.....	16,020.34

Total..... 31,411.81

Collingwood.

Emigrants' effects.....	2,340.00
Fertilizers.....	406.91
Fish (fresh).....	40,502.55
Lambs.....	1,196.00
Logs.....	377,225.00
Lumber.....	52,998.86
Laths and shingles.....	1,244.15
Returned United States products.....	175.00

Total..... 476,089.47

Cornwall.

Cats.....	10.00
Hides.....	1,963.40
Hay.....	500.00
Horse.....	10.00
Lumber.....	128.09
Personal effects.....	2,157.00
Returned American goods.....	140.00
Sea grass.....	63.15
Woolen goods.....	164.26

Total..... 5,135.90

Deseronto.

Bricks.....	132.20
Cement.....	149.50
Charcoal.....	5,010.53
Emigrants' effects.....	575.00
Flour.....	8.00
Lath.....	4,466.11
Lumber.....	76,379.76
Posts.....	2,344.00
Pulp wood.....	652.00

Shingles.....	\$8,961.70
Sawdust.....	3.00
Ties.....	2,908.89
Terra cotta.....	265.00
Telegraph poles.....	1,075.95
Total.....	102,931.64

Fort William.

Fresh fish.....	4,727.94
Lumber.....	19,330.53
Pulp wood.....	37,581.00
Silver specimens.....	102.50
Total.....	61,741.97

Gananoque.

Axle billets (returned).....	385.50
Ashes.....	600.00
Personal effects.....	1,680.00
Total.....	2,665.50

Goderich.

Fish (fresh).....	3,036.56
Horses.....	1,435.00
Household goods.....	836.50
Lambs.....	337.50
Salt.....	281.40
Wood ashes.....	160.00
Wool.....	3,206.94
Total.....	9,293.90

Guelph.

Animals for breeding purposes.....	2,808.00
Bran.....	168.00
Books (old).....	100.00
Drawing tables.....	89.90
Emigrants' effects.....	2,321.40
Flax straw.....	540.07
Glue stock.....	331.75
Hides.....	660.00
Horses.....	252.50
Hair.....	251.07
Lambs.....	1,638.50
Moccasins.....	684.10
Oats.....	1,000.00
Wool (combing fleece), washing.....	6,166.94
Total.....	17,012.23

Hamilton, Galt, and Paris.

Aniline dyes.....	1,480.00
Binding twine.....	36,234.03
Bones.....	1,240.00
Buttons (ivory).....	3,741.00
Eggs.....	3,675.00
Fertilizers.....	484.77
Hides and skins.....	31,544.53
Horses.....	7,977.00
Household goods.....	32,220.50
Ivory nuts.....	3,796.00
Lumber.....	16,581.19
Rags.....	525.00

Returned United States products.....	\$6,423.74
Rubber (scrap).....	2,967.31
Sausage casings.....	791.46
Saws.....	2,358.00
Seeds.....	248.00
Sheep and lambs.....	2,994.00
Shingles.....	586.20
Tea.....	5,385.07
Tobacco.....	183.70
Whisky.....	2,108.00
Wool.....	154,427.98
Miscellaneous.....	1,553.24
Total.....	319,519.69

Hereford.

Hogs.....	20.00
Lambs.....	1,442.00
Total.....	1,462.00

Kingston.

Copper (scrap).....	176.68
Emigrants' effects.....	3,383.00
Fish (fresh).....	5,614.08
Furs (raw).....	8,293.30
Ginseng.....	843.75
Hay.....	3,155.00
Hides and skins.....	4,331.00
Horses.....	1,330.00
Junk.....	266.00
Lumber.....	16,564.09
Posts.....	574.24
Returned goods.....	460.00
Sheep and lambs.....	1,750.00
Shingles.....	4,226.55
Tobacco.....	444.50
Wood (pulp).....	4,000.00
Wool.....	5,053.04
Total.....	60,465.23

Lindsay.

Animals for breeding purposes.....	263.00
Emigrants' effects.....	2,812.00
Hay.....	764.53
Laths and shingles.....	11,772.64
Lumber.....	14,094.24
Lambs.....	400.00
Pease (whole and split).....	6,111.30
Poles (hop and telegraph).....	111.50
Seeds.....	2,200.00
All other articles.....	294.11
Total.....	38,825.32

London.

Animals:	
Breeding.....	2,720.00
Horses.....	2,138.50
Lambs.....	1,515.05
Emigrants' effects.....	10,063.00
Hides.....	23,953.27
Lumber.....	3,599.75
Paper stock.....	1,031.50
Rags.....	1,197.45
Returned goods.....	2,660.36

Soap.....	\$21,495.55
Tea.....	1,052.18
Tobacco.....	1,199.00
Wool.....	18,727.42
Sundries.....	1,128.07
Total.....	93,481.10

Morrisburgh.

Emigrants' effects.....	693.50
Lambs.....	508.75
Lumber.....	380.00
Hay, baled.....	4,632.01
Horses.....	595.00
Total.....	6,809.26

Napanee.

Emigrants' effects.....	3,047.00
Hay.....	1,670.00
Hides and skins.....	1,225.00
Wool.....	3,086.00
Total.....	9,028.00

North Bay.

Emigrants' effects.....	535.00
Laths.....	72.18
Lumber.....	9,584.88
Nickel matte.....	145,815.60
Shingles.....	3,817.25
Total.....	159,824.91

Orillia.

Ginseng.....	543.40
Hair.....	172.17
Lumber.....	66,267.12
Personal effects.....	1,318.05
Poles.....	473.50
Shingles.....	16,846.95
Wool.....	1,911.67
Total.....	87,532.86

Oshawa.

Animals for breeding purposes.....	475.00
Apples (green).....	200.00
Clover seed.....	5,047.86
Emigrants' effects.....	1,245.00
Horses.....	544.00
Lumber and shingles.....	6,856.95
Leather.....	241.07
Pease.....	6,526.46
Total.....	21,136.34

Ottawa.

Bark.....	6,528.00
Curtain sticks.....	2,302.97
Emigrants' effects.....	3,875.00
Fertilizers.....	738.00
Files (metal).....	958.00
Hay.....	2,254.15
Hides.....	10,770.01
Horses.....	750.00
Laths.....	19,334.70
Lumber.....	493,389.54
In bond for export.....	33,822.31

Mica (crude and cut).....	\$12,551.90
Pickets.....	1,103.75
Plumbago.....	4,146.93
Pulp (sulphite).....	14,478.94
Returned United States products.....	415.00
Shingles.....	4,653.56
Slats.....	3,877.27
Ties (railroad).....	3,307.30
Wood (pulp).....	916.00
All other articles.....	1,013.52
Total.....	621,186.85

Owen Sound.

Alc.....	6.00
Bones.....	140.00
Castings.....	7.50
Chair stock.....	585.25
Household goods (emigrants').....	1,413.00
Hides.....	3,275.00
Horses.....	100.00
Lambs.....	5,639.00
Lumber.....	7,471.30
Ship timber.....	795.00
Wool.....	13,161.45
Total.....	32,593.50

Palmerston.

Bones.....	162.00
Emigrants' effects.....	2,539.00
Fish.....	23,955.92
Flax.....	5,127.17
Hides.....	2,138.71
Horns.....	100.00
Lambs.....	40,677.34
Lumber.....	16,886.50
Poles.....	131.20
Posts.....	840.00
Wool.....	23,228.45
Total.....	115,786.29

Parry Sound.

Lumber:	
Rough white pine.....	55,962.30
Rough hemlock.....	1,802.16
Pine lath.....	950.00
Rough mica.....	73.60
Total.....	58,788.06

Peterborough.

Casings.....	391.40
Emigrants' effects.....	2,287.00
Fertilizers.....	465.34
Hides.....	12,720.00
Hub blocks.....	915.00
Lambs.....	420.00
Lumber, white pine.....	440.84
Pease, fancy.....	1,554.60
Poles, telephone.....	329.15
Rags.....	220.00
Shingles.....	639.50
Wool.....	6,272.59
United States products returned.....	271.35
Total.....	26,926.77

Pictou.

Ashes (leached).....	\$700.00
Emigrants' effects.....	465.50
Pease.....	29,461.26
Wool (sheep).....	569.60
Total.....	31,196.36

Port Hope.

Beans.....	68.00
Emigrants' effects.....	4,380.00
Lambs.....	1,380.50
Pease.....	17,197.08
Wool.....	4,200.84
All other articles.....	4.60
Total.....	27,231.02

Port Rowan.

Emigrants' effects.....	2,297.50
Lumber.....	1,938.17
Sheep and lambs.....	5,828.05
Woolen rags.....	2,524.56
All other articles.....	361.50
Total.....	12,949.78

Rat Portage.

Fresh fish.....	36,525.57
Fish eggs.....	3,401.43
Fish sounds.....	214.00
Lumber.....	1,118.00
Groceries and provisions.....	171.66
Total.....	41,430.66

St. Catharines.

Edging.....	131.33
Fruit.....	546.78
Hides.....	244.36
Haircloth.....	21,149.89
Milling machine.....	150.00
Paper stock.....	125.00
Scrap, steel.....	1,084.00
Shingles.....	295.00
Whisky.....	100.00
Wood (pulp).....	3,608.56
Total.....	27,434.92

St. Hyacinthe.

Hay.....	35,462.00
Lumber.....	13,474.23
Personal effects.....	7,990.00
Horses.....	1,395.50
Sheep and lambs.....	286.70
Kangaroo skins.....	542.90
Goat hair.....	176.12
Organ, and parts of.....	1,000.00
Electric-fan motor.....	27.00
Total.....	60,354.45

Sault Ste. Marie.

Emigrants' effects.....	250.00
Fish (fresh and salted).....	18,982.42
Horses.....	115.00
Laths and shingles.....	8,289.65

Logs and timber.....	\$681,945.92
Lumber.....	161,072.95
Returned United States products.....	1,030.00
Ties (railway).....	1,215.00
Wood (pulp).....	43,500.00
Rock (broken trap).....	9,869.60
All other articles.....	126.00

Total.....926,396.54

Sorel.

Lumber.....	38,507.95
Emigrants' effects.....	420.00
Hay.....	462.00
Photo (framed).....	2.00
Honey.....	21.00

Total.....39,412.95

Stratford.

Breeding animals.....	300.00
Emigrants' effects.....	3,796.00
Flax.....	35,427.07
Lambs.....	3,006.45
Linseed-oil cake.....	2,712.03
Lumber.....	347.66
Miscellaneous.....	877.49

Total.....46,466.70

Toronto.

Animals for breeding purposes.....	655.00
Barley.....	1,280.00
Boots and shoes.....	3,257.20
Bone.....	2,538.82
Books.....	1,308.50
Bicycles.....	654.00
Buffings.....	1,336.03
Carriages.....	265.00
Chemical products.....	1,662.96
Cork (scrap).....	644.64
Diamonds.....	4,322.26
Electrical appliances.....	596.00
Emigrants' effects.....	61,902.35
Feed.....	262.54
Fertilizers.....	1,705.16
Furs.....	823.74
Felt.....	157.50
Fruit cleaners.....	397.00
Goods (dry).....	486.70
Hay and straw.....	300.00
Hides and skins.....	24,433.92
Horses.....	10,712.50
Iron castings.....	914.66
Jewelers' sweepings.....	150.00
Leather.....	1,147.88
Lumber.....	16,780.92
Machinery.....	5,203.19
Oil paintings.....	96,000.00
Pease.....	896.81
Plate (silver).....	300.00
Plaster hair.....	1,136.95
Rags.....	1,611.72
Seeds.....	1,444.00
Sheep and lambs.....	1,964.65
Show case.....	500.00
Shingles.....	190.00

Tea.....	\$1,283.23
Tar and pitch.....	598.13
Theatrical scenery.....	19,254.55
Tobacco.....	9,381.19
Wool.....	96,078.92
Whisky.....	4,437.63
Watch cases.....	110.50
Printed matter.....	993.67
Glue stock.....	528.04
Shoddy and waste.....	264.00
Scrap copper.....	856.50
Macintoshes.....	144.25
Piano.....	200.00
Water barrels.....	697.50

Total.....382,710.73

Trenton.

Hides.....	5,294.00
Household goods.....	713.00
Laths (pine).....	2,149.38
Lambs.....	445.00
Lumber.....	58,600.16
Posts (cedar).....	573.00
Poles (telegraph).....	280.00
Shingles.....	257.50
Spruce wood.....	987.00
Timber.....	345.00
Wool.....	6,200.00

Total.....75,844.04

Wallaceburgh.

Emigrants' effects.....	2,024.00
Hay.....	1,534.00
Logs and timber.....	16,692.50
Lumber.....	98.50
Sheep and lambs.....	406.70
Shooks, staves, bolts, etc.....	42,081.49
Wood (cord).....	5,365.00

Total.....68,202.19

Waukenahe.

Fish.....	2,227.48
Pine:	
Logs.....	217,812.00
Lumber.....	118,807.59
Pickets.....	479.71
Shingles.....	2,529.52

Total.....341,856.30

PRINCE EDWARD ISLAND.

Charlottetown.

Agricultural products:	
Hay.....	232.50
Potatoes.....	1,999.90
Animals (horses).....	691.00
Canned fruits (blueberries).....	970.50
Eggs.....	2,697.30
Emigrants' effects.....	6,963.65
Fish:	
Canned herring.....	39.00
Canned lobsters.....	89,778.14

Fish—Continued.

Canned mackerel.....	\$1,103.75
Salted mackerel.....	71,238.50
Sounds.....	162.50
Fur, hides, and skins.....	8,115.40
Leather.....	250.50
Meats (fresh lamb).....	146.25
Sundries.....	60.30
Wool.....	15,798.56
Total.....	200,237.45

QUEBEC.

Coaticook.

Animals:	
Horses.....	40.00
Lambs.....	5,282.00
Articles, the growth, produce, and manufacture of the United States returned:	
Empty barrels.....	497.00
Empty boxes (tin).....	8.00
Hay.....	539.00
Household and personal effects.....	1,905.00
Wood:	
Clapboards.....	9,598.00
Laths.....	70.00
Lumber.....	478.00
Plies.....	1,024.00
Shingles.....	275.00
Total.....	19,710.00

Cookshire.

Animals:	
Lambs.....	11,027.20
Sheep.....	105.00
Articles returned to the United States (planing machines).....	1,600.00
Household and personal effects.....	375.00
Wood and manufactures of:	
Lumber.....	49,749.86
Pulp wood.....	5,752.00
Shingles.....	74.00
Ships' knees.....	229.00
Clapboards.....	8,870.00
Lath.....	275.00
Telegraph poles.....	420.00
Total.....	78,477.56

Coleau.

Lumber.....	5,539.19
Wool.....	1,861.00
Hemlock bark.....	1,970.00
Hay.....	2,480.75
Personal effects.....	690.00
Total.....	12,560.94

Gaspe Basin.

Codfish (dry).....	15.00
Household goods.....	25.00
Railway ties (cedar).....	2,038.69
Total.....	2,078.69

Grenville.

Hemlock bark.....	\$96.00
Match blocks.....	8,048.25
Sawed lumber.....	104,935.41
Shingles.....	269.68
Wool.....	211.40
Total.....	113,560.74

Hemmingford.

Horses.....	365.00
Lambs.....	1,961.85
Personal effects.....	325.00
Wool.....	312.06
Total.....	2,963.91

Hinchinbrook.

Personal effects.....	48.50
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Huntingdon.

Horses.....	805.00
Lambs.....	459.00
Wool.....	265.00
Total.....	1,529.00

Lachine.

Hay.....	630.00
Lumber.....	3,381.97
Total.....	3,011.97

Lineboro.

Spruce logs.....	22,872.00
Beef hides.....	11,086.00
Lambs.....	2,241.00
Personal effects.....	1,105.00
Maple sugar.....	1,079.00
Horses.....	800.00
Hemlock bark.....	700.00
Cedar poles.....	508.00
Sheep.....	464.00
Lumber.....	459.00
Copper matte.....	422.00
Hay.....	205.00
Pulp wood.....	150.00
Rough granite.....	112.00
Total.....	42,203.00

Megantic.

Unmanufactured lumber.....	22,070.50
Clapboards.....	4,657.00
Pulp wood.....	1,224.00
Wood pulp.....	1,134.00
Shingles.....	500.00
Lath.....	635.00
Household goods and emigrants' ef- fects.....	755.00
Returned American goods.....	47.03
Total.....	31,022.53

Montreal.

Apatite, ground.....	170.00
Asbestos.....	15,401.75
Ashes, pot.....	148.51

Books.....	\$817.12
Balsam.....	519.00
Brandy.....	210.00
Buttons.....	333.50
Bone black.....	2,642.73
Coffee.....	1,192.47
Copper ore.....	200.00
Cattle hair.....	412.50
Cartridges.....	7,180.24
Copper scrap.....	2,931.45
Cotton waste.....	9,362.10
Cement.....	9,495.31
Clothing.....	577.92
Drugs.....	135.00
Dyes.....	3,145.00
Furs:	
Raw.....	3,640.00
Cuttings and waste.....	521.88
Dressed.....	701.23
Hatters' waste.....	515.63
Feathers.....	159.23
Fish, salt.....	1,845.00
Gas liquor.....	1,077.15
Gin.....	579.75
Glue stock.....	79.95
Horses.....	14,025.00
Hair:	
Plastering.....	218.18
Horse.....	118.25
Human.....	120.00
Hoofs and horns.....	540.23
Hides.....	29,167.15
Hay.....	20,204.99
Iron:	
Pig.....	163.97
Scrap.....	583.40
Tinned.....	1,071.05
Jewelers' sweepings.....	1,275.00
Junk.....	833.24
Lumber.....	25,046.44
Lemons.....	960.00
Leather (scrap).....	108.45
Liquors.....	303.07
Machinery.....	2,280.00
Mineral water.....	510.00
Nails.....	429.00
Oil (cod liver).....	1,038.45
Oxide of iron.....	295.95
Personal effects.....	37,717.25
Paper stock.....	3,755.33
Pitch.....	739.37
Pig casings.....	175.80
Paris green.....	93.60
Powder (washing).....	156.95
Paintings.....	1,705.00
Returned American goods.....	15,170.24
Steel sheets.....	389.69
Skins:	
Sheep.....	1,528.50
Calf.....	20,983.29
Lambs.....	90.00
Sugar of lead.....	253.04
Seal oil.....	136.45
Stationery.....	225.25
Sirup of turpentine.....	400.00
Tobacco.....	155,776.22

Pin ingots.....	\$79.54
Telephones.....	311.23
Tankage.....	500.00
Tobacco:	
Manufactured.....	133.00
Cuttings.....	252.17
Umbrellas.....	269.55
Wine.....	195.20
Wall paper.....	117.50
Woolens.....	1,152.06
Wood and manufactures.....	2,821.49
Total.....	428,413.96

Paspebiac.

Books.....	.20
Chalice.....	50.00
Inkstand.....	.10
Lobsters.....	1,776.00
Surplice.....	.10
Shingles, cedar.....	10,620.00
Telescope.....	2.00
Toilet boxes.....	2.00
Railway ties.....	17,780.48
Walking sticks.....	.20
Woolen shawl.....	2.00
Total.....	30,233.08

Potton.

Emigrants' and household effects.....	525.00
Lumber.....	262.00
Lambs.....	697.00
Total.....	1,484.00

Quebec.

Animals.....	1,120.00
Balsam (fir).....	4,722.02
Fish (fresh).....	501.00
Furs (dressed).....	6,834.00
Fruit.....	14,507.97
Hair (plastering).....	1,613.00
Household goods.....	6,874.00
Lumber.....	94,101.69
Goods returned to United States.....	5,500.98
Sea grass.....	2,863.60
Sugar (maple).....	43,965.58
Sundries.....	3,619.32
Total.....	186,283.16

St. John's.

Hay.....	50,569.60
Harness.....	10.00
Hides.....	670.80
Horses.....	4,019.00
Lambs.....	3,797.40
Lumber.....	13,608.74
Machinery.....	125.00
Oats.....	7.50
Personal effects.....	8,973.50
Pulp wood.....	5,616.72
Robes.....	5.00
Straw.....	162.00
Straw plait.....	214.00
Timber.....	15,837.33

Trunks.....	\$220. 00
Wagons.....	540. 00
Wool.....	9,448. 00
Total.....	133,224. 47

Sherbrooke.

Animals :	
Horses.....	265. 00
Lambs.....	12,387. 45
Asbestos.....	23,792. 50
Bark.....	300. 00
Chrome ore.....	11,393. 00
Clapboards.....	12,148. 50
Effects.....	7,602. 05
Hides.....	1,511. 58
Hay.....	134. 00
Lumber.....	33,788. 40
Miscellaneous.....	1,384. 96
Pyrites (copper).....	6,501. 15
Returned United States goods.....	1,242. 58
Sulphur ore.....	11,811. 65
Shingles.....	548. 21
Ties.....	5,481. 53
Telegraph poles.....	351. 50
Woolens (wreeds).....	4,792. 05
Total.....	135,436. 11

Stanstead.

Horses.....	365. 00
Machinery.....	110. 00
Hardware.....	104. 00
Personal effects.....	900. 00
Total.....	1,479. 00

Waterloo.

Household goods.....	1,305. 00
Lumber.....	10,134. 00
Total.....	11,439. 00

CHILE.*Antofagasta.*

Nitrate of soda.....	55,193. 64
Cocaine.....	1,600. 00
Chinchilla skins.....	9,276. 70
Total.....	66,070. 34

Arica.

Cotton.....	483. 69
Silver ore.....	683. 40
Bolivian coffee.....	78. 70
Olives.....	47. 30
Total.....	1,293. 09

Iquique.

Iodine.....	105,601. 96
Nitrate of soda.....	773,294. 07
Total.....	878,896. 03

Valparaiso.

Canary seed.....	491. 51
Chinchilla skins.....	285. 95
Iodine.....	10,040. 29

Lentils.....	\$605. 93
Manganese ore.....	658. 26
Medicinal herb (pichi).....	105. 78
Quillai bark.....	3,786. 51
Silver-lead ores.....	304. 61
Walnuts.....	5,844. 48
Total.....	22,123. 32

CHINA.*Canton.*

Cassia.....	9,358. 49
China ware.....	6,148. 33
Fans.....	16,853. 78
Firecrackers.....	72,872. 62
Matting.....	412,820. 92
Paper.....	3,220. 30
Preserves.....	2,560. 65
Rattans and ware.....	25,822. 28
Raw silk.....	1,031,070. 37
Silk piece goods.....	15,199. 94
Tea.....	4,126. 03
Wooden ware.....	12,549. 89
Sundries (including bristles, cantharides, gallnuts, grass cloth, ivory, skins, etc.).....	16,840. 98
Total.....	1,629,444. 58

Fichau.

Chinese books.....	20. 35
Curios and Chinese goods.....	8. 45
Lychel.....	13. 19
Tea.....	316,746. 00
Total.....	316,864. 99

COLOMBIA.*Barranquilla.*

Balsam copaiba.....	186. 18
Coffee.....	597,413. 98
Goatskins.....	886. 54
Heron feathers.....	1,600. 00
Hides.....	68,607. 27
Horsehair.....	21. 81
Plants.....	223. 63
Straw hats.....	2,833. 09
Skins.....	1,701. 81
Rubber.....	366. 36
Total.....	673,790. 67

Cartagena.

Bananas.....	758. 85
Cedar and mahogany.....	2,442. 85
Cocoanuts.....	2,042. 32
Coffee.....	138,845. 53
Copaiba.....	1,600. 00
Feathers.....	795. 71
Gold dust.....	8,665. 00
Hides.....	42,153. 92
Horsehair.....	10. 35
Ivory nuts.....	204. 64
Plants.....	1,785. 72
Rubber.....	10,937. 97

Sarrapia nuts.....	\$330.85
Skins.....	220.78
Total.....	210,794.50

Colon.

Bananas.....	17,715.34
Cocconuts.....	2,312.14
Cocobolo wood.....	3,656.27
Fustic.....	9.32
Hides.....	312.27
Ivory nuts.....	9,187.00
Manganes ore.....	22,799.77
Mahogany.....	4,646.90
Pearl-oyster shells.....	1,457.12
Rubber.....	1,224.79
Silver (Colombian specie).....	8,180.90
Skins.....	68.63
Tortoise shell.....	3,155.32
Total.....	74,655.77

Panama.

American manufactures returned.....	380.78
Cacao.....	1,384.26
Coffee.....	7,531.60
Hides.....	13,861.07
India rubber.....	21,103.94
Ivory nuts.....	2,153.61
Metals (old brass and copper).....	33.29
Miscellaneous.....	7,571.88
Ores (gold bearing).....	339.71
Sasaparilla.....	220.47
Shells:	
Mother-of-pearl.....	20,009.61
Tortoise.....	554.53
Skins (deer).....	4,216.45
Wood:	
Cocobolo.....	1,850.11
Mahogany.....	1,287.09
Total.....	82,488.40

Rio Hacha.

Bones.....	157.00
Coffee.....	4,435.00
Divi-divi.....	80.00
Feathers (heron).....	254.00
Hides.....	4,302.00
Horns.....	16.00
Skins.....	19,890.00
Total.....	29,094.00

Santa Marta.

Bananas and plantains.....	13,349.99
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DANISH WEST INDIES.

Christiansted (St. Croix).

Limes.....	34.42
Sugar.....	6,779.62
Tamarinds.....	101.40
Total.....	6,915.44

Fredericksted (St. Croix).

Sugar.....	\$39,123.30
Rum.....	537.63
Total.....	39,660.93

St. Thomas.

Bay rum.....	1,790.44
Rum.....	123.31
Skins (goat).....	472.85
Telephonic accessories.....	177.80
Turtle shell.....	4,245.50
Whisky (returned goods).....	1,538.25
Total.....	8,348.15

DENMARK.

Copenhagen.

Acid (butyric).....	259.69
Animals for breeding.....	67.00
Bagging.....	1,112.21
Books.....	1,984.76
Brass ware.....	463.25
Cement.....	28,055.09
Chalk.....	1,864.48
Cocoanut oil.....	353.52
Coffee.....	2,826.99
Cork.....	298.97
Cotton:	
Nets.....	589.60
Tares.....	116.82
Flint stones.....	1,059.82
Furniture, antique.....	1,676.07
Fusel oil.....	306.66
Glue.....	1,831.60
Hides.....	2,791.77
Household goods.....	321.60
Machinery.....	1,493.67
Music.....	623.90
Paintings and frames.....	6,844.72
Porcelain and terra cotta.....	4,941.67
Rags.....	1,120.08
Rape-seed oil.....	5,902.82
Rennets.....	3,012.48
Rope, old.....	914.22
Rubber shoes, old.....	1,272.32
Silverware.....	4,474.93
Skins, dressed.....	6,032.50
Wool.....	9,079.68
Miscellaneous.....	239.93
Total.....	91,932.81

DOMINICAN REPUBLIC.

Asua.

Sugar.....	72,391.50
Goatskins.....	5,177.93
Oxhides.....	829.39
Bee honey.....	3,935.13
Beeswax.....	2,692.44
Total.....	85,026.39

Macoris.

Sugar.....	\$137,201.51
Wax.....	1,181.80
Cocoa.....	1,445.60
Tortoise shell.....	250.00
Guaycum.....	343.04
Total.....	140,921.95

Monte Christi.

Beeswax (in transit for Europe).....	822.00
Coffee.....	450.00
Divi-divi.....	787.50
Goatskins.....	745.00
Hides (dry).....	218.40
Logwood.....	16,873.75
Satinwood.....	911.45
Specie.....	1,935.00
Total.....	22,743.10

Puerto Plata.

Cowhides.....	3,743.21
Goatskins.....	6,520.00
Honey.....	606.17
Mahogany.....	902.89
Sugar.....	3,085.09
Total.....	14,857.36

Santo Domingo.

Cacao.....	4,946.51
Coach for repairs.....	300.00
Hides.....	4,013.96
Honey.....	804.40
Lignum-vitæ.....	2,949.05
Logwood.....	1,248.26
Machinery for repairs.....	1,275.50
Sugar.....	29,935.66
Wax.....	1,827.15
Total.....	47,300.49

DUTCH GUIANA.

Paramaribo.

Balata.....	39,131.22
Cocoa.....	239,551.60
Coffee.....	362.42
Gold.....	2,300.06
Hides.....	66.08
Nuts (Indian).....	47.94
Pickled limes.....	61.28
Sugar.....	49,720.94
Total.....	324,241.54

DUTCH INDIA.

Batavia.

Coffee.....	297,485.35
Dammar.....	17,260.03
Hats.....	8,309.54
Pepper.....	216.59
Sugar.....	1,285,195.54
Tea and coffee (samples).....	113.00
Total.....	1,608,580.05

Macassar.

Coffee.....	\$68,946.21
Gum copal.....	11,563.16
Nutmegs.....	2,938.29
Total.....	83,447.66

Padang.

Cassia.....	10,193.30
Coffee.....	368,013.20
Nutmegs.....	9,397.90
Mace.....	2,633.32
Rattans.....	1,950.00
Dammar.....	570.00
Total.....	399,757.72

Samarang.

Coffee, sugar, and skins.....	815,147.36
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Sarabaya.

Coffee.....	24,760.22
Hides.....	3,209.97
Sugar.....	4,511,250.42
Total.....	4,539,211.61

DUTCH WEST INDIES.

Buen Ayre.

Salt.....	1,840.05
Brazil wood.....	242.02
Total.....	1,282.07

Curaçao.

Aloes.....	6,878.54
Coffee.....	739.20
Divi-divi.....	510.83
Hides and skins.....	8,046.92
Salt.....	2,531.96
Straw hats.....	474.31
Sundries.....	1,679.44
Wood.....	2,465.20
Wool.....	239.06
Charges.....	527.75
Total.....	24,093.21

St. Martin.

Salt (coarse, in bulk).....	5,501.19
Skins (goat and sheep).....	189.00
Total.....	5,690.19

ECUADOR.

Bahia de Caraquez.

Cocoa.....	152.72
Coffee.....	1,532.98
Hides.....	972.88
Ivory nuts.....	2,008.38
Rubber.....	18,063.27
Total.....	23,630.27

Esmeralda.

Cocoa.....	\$99.45
Egret feathers.....	295.00
Gold.....	990.00
Hides.....	509.04
Ivory nuts.....	5,958.50
Rubber.....	11,230.45
Sarsaparilla.....	23.52
Total.....	19,065.96

Guayaquil.

Cocoa.....	99,985.67
Coffee.....	101,887.08
Garza plumcs (heron).....	1,592.81
Gold:	
Old.....	184.14
Coin.....	155.52
Hammock.....	9.72
Hides.....	23,022.57
Ivory nuts.....	2,729.80
Kapok (Lana de Ceiba).....	1,007.52
Rubber.....	44,326.30
Silver:	
Old.....	122.83
Coin.....	31.85
Straw hats (panama).....	929.42
Sugar.....	262.44
Total.....	276,177.67

Manta.

Cacao.....	831.36
Coffee.....	3,070.35
Hides.....	1,665.82
Rubber.....	5,200.65
Total.....	10,768.18

FRANCE.

Angers.

Books.....	1,991.16
Glue.....	177.97
Kernel or green of walnut.....	2,647.79
Mine orange.....	1,472.99
Plants.....	309.92
Rosaries.....	910.10
Seeds.....	3,914.13
Wines.....	3,072.37
Total.....	13,696.03

Bordeaux.

Brandy.....	5,795.36
Calf hair.....	4,580.45
Candies.....	266.16
Capsules.....	7,672.57
Cheese.....	2,139.29
Corks.....	209.15
Ferro chrome.....	330.00
Fruits.....	102,664.89
Glycerin.....	6,548.22
Gum.....	6,965.68
Liqueurs.....	10,681.29
Macaroni.....	4,886.80

Meat.....	\$4,586.19
Mineral water.....	5,069.14
Mustard.....	3,002.48
Nuts.....	3,888.91
Olive oil.....	55,967.27
Paper.....	26,960.78
Prunes.....	12,979.39
Rags.....	25,149.26
Sardines.....	102,560.24
Skins.....	13,937.07
Soap.....	142.06
Sundries.....	92.91
Talc.....	2,825.79
Tartar.....	56,657.12
Truffles.....	2,699.21
Vanilla.....	1,331.50
Vegetables.....	149,488.08
Vinegar.....	851.02
Wine.....	161,891.85
Wood extract.....	954.75
Wool.....	300,261.46
Total.....	1,084,036.34

Boulogne-sur-mer.

Optical goods.....	265.79
Rags.....	709.65
Total.....	975.44

Brest.

Sardines.....	40,959.93
Sprats.....	9,937.43
Petits pois.....	2,913.27
Total.....	53,810.63

Calais.

Lace.....	203,817.41
Lastings.....	906.38
Velvet and velveteens.....	8,183.21
Wine.....	54.43
Total.....	212,961.43

Cannes.

Almond meal.....	195.76
Confectionery.....	189.14
Mineral water.....	23.16
Oil:	
Almond.....	902.39
Olive.....	9,388.18
Rape seed.....	19.05
Paper and labels.....	32.02
Perfumery.....	109,448.84
Pottery.....	46.72
Total.....	120,245.26

Caudry.

Ceramic paving.....	697.00
Laces.....	6,253.00
Total.....	6,950.00

Cognac.

Brandy.....	112,613.88
Brass-wire netting.....	700.51

Olive oil.....	\$458.38
Paper.....	358.15
Wine (red).....	154.40
Wool.....	4,146.05
Total.....	118,431.37

Dieppe.

Flint:	
Boulders.....	6,269.00
Pulverized.....	800.00
Chalk.....	517.00
Block chalk.....	4,945.00
Total.....	12,531.00

Dijon.

Hardware, machinery, and tools.....	3,662.50
Linen lace goods.....	10,927.99
Macaroni.....	6,569.64
Musical instruments.....	1,982.80
Optical goods (spectacles).....	1,534.88
Pipes, etc.....	20,547.58
Scales and weights.....	262.07
Watches.....	200.22
Wines and liquors.....	16,572.33
Wood sticks.....	539.44
Woolen goods.....	111.22
Total.....	62,870.67

Dunkirk.

Chalk.....	1,774.00
Flints.....	500.00
Manilla rope.....	490.00
Miller.....	549.00
Patent fuel.....	2,813.00
Pipes.....	526.00
Total.....	6,652.00

Grenoble.

Cheese.....	10,734.52
Glove fasteners.....	366.81
Gloves.....	455,919.74
Liqueurs.....	6,618.05
Machinery.....	1,895.86
Paste (alimentary).....	478.45
Skins (raw and dressed).....	13,951.56
Show cards.....	139.92
Tapes for gloves.....	154.14
Welts for gloves.....	132.11
Walnuts.....	2,818.75
Total.....	493,209.91

Havre.

Articles of Paris.....	134.06
Art pictures.....	7,450.18
Books.....	67.55
Bric-a-brac.....	6,342.08
Bristles.....	10,590.32
Caltskins, leather, and hides.....	37,434.33
Cheese.....	5,345.23
Church ornaments.....	633.20
Copper.....	23,297.37
Dyestuffs.....	27,385.64
Empty bags.....	125.45

Feathers.....	\$3,783.33
Furniture.....	3,911.14
Glass jars.....	406.07
Hair (vegetable and horse).....	2,502.55
India rubber.....	25,682.87
Stones.....	51.01
Lard.....	2,179.78
Liqueurs.....	8,558.96
Machinery.....	196.86
Musical instruments.....	189.72
Oils.....	207.88
Nickel.....	5,043.08
Ocher.....	1,027.45
Vegetables.....	175.06
Preserves.....	50.66
Rags and old rope, etc.....	18,779.03
Stearin.....	24,863.53
Seeds and plants.....	19,059.22
Saffron.....	2,859.11
Sulphonide.....	2,600.94
Sea flint.....	296.91
Tin.....	16,221.50
Tapestry.....	3,914.62
Wines.....	167.52
Wool.....	3,839.64
Total.....	265,393.85

Lille.

Carved stone.....	692.00
Chemicals.....	18,321.00
Clover seed.....	957.00
Cotton:	
Goods.....	645.00
Waste.....	1,468.00
Dress goods.....	1,334.00
Flax (tow and waste).....	30,919.00
Glass.....	1,220.00
Hosiery.....	99.00
Jute yarn.....	9,354.00
Machinery.....	865.00
Malt.....	777.00
Soap grease.....	5,824.00
Thread.....	2,135.00
Tiles.....	154.00
Upholstery goods.....	8,955.00
Wool cloths.....	1,707.00
Wool and wastes.....	191,948.00
Yarns.....	41,974.00
Total.....	319,502.00

Limoges.

Books.....	324.22
China.....	189,210.11
Rabbit hair.....	12,445.16
Truffles.....	618.22
Total.....	192,597.70

Lorient.

Pease.....	22,216.46
Sardines.....	37,820.11
Total.....	60,036.57

Lyons.

Argols.....	\$4,085.18
Candle wicks.....	330.31
Celluloid, manufactures of	2,485.18
Church ornaments and metallic trim- mings.....	58,517.62
Cotton goods.....	344.32
Dyestuffs.....	13,820.89
Furs (hatters').....	8,032.55
Glue and gelatin.....	13,167.10
Hardware, machinery, etc.....	5,392.37
Macaroni.....	14,681.49
Marbles for mosaics.....	3,205.63
Mineral water.....	11,230.86
Mineral strings and instruments.....	3,487.43
Preserved fruits.....	1,442.78
Sausages.....	204.77
Silk:	
Combed.....	5,633.96
Flows.....	209.68
Raw.....	497,101.32
Spun.....	6,363.27
Waste.....	41,444.01
Handkerchiefs, mufflers, etc.....	7,020.86
Piece goods.....	1,080,744.50
Pongee.....	132,206.06
Ribbons.....	42,370.08
Tulles, crapes, etc.....	204,494.53
Velvet and plush.....	196,475.24
Skins, hides, and leather.....	24,661.14
Tapestries.....	2,764.00
Theatrical goods.....	1,975.94
Weavers' supplies.....	2,521.71
Wine.....	125.76
Total.....	2,386,490.54

Nantes.

Beans (string).....	2,927.66
Foie-gras.....	780.53
Macaroni.....	219.83
Mushrooms.....	4,557.19
Pease.....	8,636.02
Pickles.....	323.69
Sardines.....	50,158.21
Total.....	67,603.02

Nice.

Household goods.....	10,055.19
Olive oil.....	4,593.92
Total.....	14,649.11

Paris.

Albumen.....	6,122.00
Argols.....	26,030.00
Art, works of (paintings, bronzes, stat- uary, and antiquities).....	862,401.00
Blacking.....	21,987.00
Books, prints, engravings, etc.....	68,884.00
Boots, shoes, and manufactures of leather.....	3,089.00
Brandy and liqueurs.....	7,122.00
Bristles.....	25,323.00
Brushes.....	111,469.00
Buttons and trimmings.....	232,684.00

Carriages.....	\$20,970.00
Chemicals.....	15,537.00
Church ornaments and metallic trim- mings.....	50,416.00
Clocks and watches, and materials of..	83,205.00
Confectionery and chocolate.....	13,430.00
Corsets.....	28,195.00
Costumes and dresses.....	138,604.00
Cotton goods.....	54,816.00
Drugs and medicines.....	42,507.00
Dyestuffs.....	995.00
Fancy goods.....	355,468.00
Feathers and flowers (artificial and millinery).....	1,092,541.00
Furniture and household effects.....	192,223.00
Glassware, china, earthenware, and tiles.....	227,617.00
Gloves.....	220,745.00
Glue and gelatin.....	27,403.00
Glycerin.....	93,037.00
Grease, tallow, and stearin.....	9,948.00
Hair:	
Animal.....	2,634.00
Human.....	12,326.00
Hardware, machinery, and metal man- ufactures.....	85,823.00
Hatters' goods (rabbit skins, etc.) and furs.....	921,016.00
Horn strips for corsets.....	32,909.00
Horses.....	7,488.00
Hosiery and underwear.....	24,955.00
Jewelry and precious stones.....	492,326.00
Laces, veillings, crapes, and embroid- eries.....	322,208.00
Linen goods.....	30,151.00
Macaroni.....	1,557.00
Merinos, cashmeres, and miscellane- ous dress goods.....	1,867,629.00
Mushrooms.....	46,103.00
Musical instruments.....	39,677.00
Olive oil.....	1,181.00
Optical and scientific instruments.....	154,303.00
Paints, colors, and artists' supplies....	34,209.00
Paper and stationery.....	19,380.00
Perfumery and toilet articles.....	149,424.00
Pipes and smokers' articles.....	14,945.00
Platinum.....	62,614.00
Preserves:	
Fruits and vegetables.....	20,603.00
Meats (<i>foie gras</i>).....	3,060.00
Sardines.....	25,326.00
Rags.....	43,518.00
Rubber manufactures.....	12,167.00
Seeds and plants:	
Clover.....	92,644.00
Other seeds and plants.....	3,214.00
Shawls.....	5,286.00
Silk goods.....	234,668.00
Skins, hides, and leather.....	470,879.00
Stones (millstones, marble, etc.).....	10,626.00
Upholstery goods and wall paper.....	248,305.00
Vanilla and vanilline.....	16,382.00
Wine.....	10,945.00
Wood, wood ware, and willow ware....	3,002.00
Wool.....	1,889.00
Woolen cloth.....	30,189.00

Yarns	\$22,611.00
All other articles.....	389,205.00
Total.....	9,989,992.00

Rheims.

Buckles.....	371.52
Caoutchouc.....	4,184.63
China ware.....	9,152.16
Corsets.....	117.95
Cotton goods.....	2,261.75
Drugs.....	7,154.28
Fancy goods.....	149.50
Furniture.....	62.23
Gingerbread and cakes.....	202.48
Glass:	
Glassware.....	123.32
Mirrors.....	9,419.62
Watch crystals.....	483.92
Window.....	11,834.20

Iron:

Steel printing designs.....	747.40
Steel tubes and hardware.....	8,291.55
Kid gloves.....	299.10
Lithographic cards and maps.....	24.13
Machinery.....	100.15
Mineral water.....	290.45
Rabbit skins.....	7,520.50
Silk, shoddy or waste.....	797.42
Statuary.....	2,919.80
Straw hats.....	4,106.05
Straw coverings.....	427.50
Tin foil and caps.....	273.00
Wash blue.....	2,042.10
Willow ware.....	7,841.85

Wines and liquors:

Brandy and rum.....	39.62
Champagne.....	565,651.10

Wool:

Textiles.....	93,731.50
Yarns.....	10,941.55
Total.....	751,563.33

Roubaix.

Carbonate of potash.....	5,614.00
Card clothing.....	1,504.00
Combs.....	342.00
Dress goods.....	1,519,539.00
Gloves.....	604.00
Grease.....	722.00
Leather aprons.....	121.00
Upholstery goods.....	77,071.00
Vestings.....	639.00
Woolen cloths.....	384.00
Wool and waste.....	22,971.00
Yarns.....	27,921.00
Total.....	1,657,432.00

Rouen.

Bristles.....	9,615.60
Chemicals.....	931.14
Cotton goods.....	141.27
Cloth.....	1,660.40
Hungarian flour.....	810.00
Mechanical instruments.....	34.00

Rags and tares.....	\$10,196.34
Tares (cotton).....	897.60
Spun angora rabbit.....	5,667.17
Surrogate caoutchouc.....	1,925.71
Total.....	31,899.23

St. Etienne.

Bonbons.....	2,394.69
Braids.....	5,682.53
Button stock.....	6,165.23
Cheese.....	4,035.91
Chemicals.....	170.76
Gloves.....	16,210.22
Haircloth.....	1,077.87
Harness (looms).....	1,525.52
Knives.....	395.06
Laces.....	16,785.93
Linings.....	894.64
Macaroni.....	122.99
Mineral water.....	187.78
Mohair.....	829.05
Rat traps.....	5,205.59
Ribbons:	
Silk.....	83,685.61
Velvet.....	213,355.81
Elastic.....	1,762.89
Total.....	360,488.08

Troyes.

Kid gloves.....	126,035.36
Hosiery.....	9,460.00
Total.....	135,495.36

FRENCH WEST INDIES.

Guadeloupe.

Sugar.....	719.00
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Martinique.

Rum.....	20.00
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GERMANY.

Aix la Chapelle.

Buttons (agate).....	7,165.82
Chemicals.....	36,168.97
Glass (looking and rough).....	2,858.63
Hooks and eyes.....	10,740.76
Linen goods.....	2,824.59
Miscellaneous.....	2,013.30
Natural mineral water.....	4,304.63
Paper.....	62,546.85
Pins and needles.....	22,212.23
Rags.....	5,577.50
Steel.....	2,408.92
Woolen cloth.....	272,881.21
Total.....	431,703.81

Annaberg.

Cotton:	
Lace curtains.....	1,290.91
Fringes and cords.....	278.39

Leather gloves.....	\$2,208.40
Paper ware.....	15,043.17
Toys.....	11,599.39
Trimmings.....	278,272.45
Wooden ware.....	970.73
Total.....	309,663.44

Augsburg.

Books, etc.....	13,910.07
Metal paper.....	4,194.95
Instruments:	
Mathematical.....	2,769.47
Musical.....	2,428.34
Glassware.....	2,381.73
Statuary.....	1,922.13
Chemicals.....	1,376.78
Cotton thread.....	1,362.72
Willows.....	1,072.03
Manufactures of paper.....	999.83
Porcelain.....	782.75
Pottery.....	652.39
Whalebones.....	431.70
Watch mainsprings.....	404.39
Matches.....	404.18
Miscellaneous.....	1,275.62
Total.....	36,369.08

Bamberg.

Basket ware.....	57,499.27
Beer.....	5,876.94
Carbons, electric.....	457.60
China ware.....	78,647.65
Drugs.....	625.43
Hides.....	3,649.35
Hops.....	1,942.77
Steel (manufactured).....	1,371.51
Works of art.....	275.49
Total.....	150,346.01

Barmen.

Braided and tamboured fabrics:	
Feather stitch braids.....	35,578.75
Cotton galloons.....	4,632.45
Trimmings.....	28,765.22
Linen and cotton laces.....	58,051.34
Mohair and woolen braids.....	11,498.83
Bands and ribbons (of cotton and cotton and silk):	
Beltings.....	10,524.09
Bone casings.....	24,899.45
Boot and shoe laces (iron yarn).....	47,949.60
Hatbands and ribbons of cotton, silk, and silk mixed.....	248,070.58
Yarns.....	16,549.95
Upholstery goods (brocattelle and tapestry of silk, linen, and cotton).....	47,836.68
Silk and cotton mixed goods (umbrella, satin, serge).....	176,611.31
Vestings and mantle cloths.....	6,341.20
Woolen goods.....	104,676.51
Woolen mixed goods.....	15,344.96
Plushes.....	2,243.77
Linen goods.....	3,335.21
Button stuffs.....	7,574.47

Buttons.....	\$26,864.31
Dyes and chemicals.....	263,383.70
Brass, bronze, and fancy goods (buckles, hooks, eyes, etc.).....	34,659.67
Hardware and cutlery.....	496,076.10
Iron and steel in various shapes.....	11,812.70
Nickel (soluble, etc.).....	12,667.50
Needles and pins.....	28,062.72
Machines.....	2,574.80
Provisions.....	3,033.47
Paper and books.....	13,081.75
Coke.....	6,662.43
Miscellaneous.....	2,781.30
Total.....	1,746,444.82

Berlin.

Albums.....	70,162.70
Artificial flowers.....	4,950.27
Astrakhan.....	46,678.31
Baskets and cane ware.....	2,111.76
Books and printed matter.....	16,935.25
Buttons.....	8,275.36
Chemicals and drugs.....	61,920.52
Colors, aniline.....	63,836.50
China ware and earthenware.....	16,189.64
Dress goods (velvets, plush, cloth).....	101,966.54
Chromos and photographs.....	56,597.72
Fancy feathers.....	35,451.40
Glassware.....	30,404.35
Gloves and glove leather.....	151,160.70
Glucose, dextrin, and potato flour.....	22,978.31
Human hair and wigs.....	2,735.07
Hides, furs, and skins.....	141,723.62
Horsehair cloth.....	5,499.70
Instruments:	
Musical.....	34,616.38
Optical and scientific.....	6,531.45
Lanolin.....	4,576.75
Leather goods.....	10,418.96
Leather glue.....	4,002.20
Linen goods.....	30,811.20
Metal ware, machinery, and apparatus.....	57,314.06
Paintings.....	13,227.99
Paper ware and fancy paper.....	100,704.77
Rags.....	61,250.93
Ready-made clothing.....	386,519.86
Shawls.....	46,362.87
Sheep guts and rennets.....	17,638.17
Sugar, raw (beet).....	9,554.30
Trimmings and embroideries.....	55,730.85
Toys.....	37,563.80
Wine, liquors, and fruit juice.....	5,336.80
Yarn (mohairs).....	41,050.02
Zinc goods.....	2,270.82
Sundries.....	92,249.50
Total.....	1,857,308.70

Brake.

Glassware.....	1,424.63
Straw covers.....	1,551.55
Corks.....	1,344.76
Total.....	4,320.94

Bremen.

Books, sheet music, etc.....	\$3,996.73
Cement.....	27,936.92
Drugs, paints, and chemicals.....	3,976.50
Glassware.....	11,229.55
Rags and paper stock.....	19,053.80
Sundry merchandise.....	4,876.86
Tobacco.....	17,442.54
Rice and rice flour.....	357,514.32
Whisky.....	115,643.01
Willow, straw, and wooden ware.....	28,312.48
Wine, beer, and liquors.....	34,429.56
Wool grease.....	11,137.21
Total.....	635,549.48

Bremerhaven-Geestemunde.

Beer.....	4,277.11
Birds and animals (live).....	8,318.46
Brooms.....	551.44
Sauerkraut.....	287.38
Skins, dressed and dyed.....	566.90
Wooden shoes.....	65.45
Total.....	14,066.74

Breslau.

Arsenic.....	5,109.34
Brushes.....	3,522.73
Cellulose.....	11,914.36
Chemicals.....	8,028.13
Chromos.....	4,957.43
Coat hangers.....	946.78
Fancy paper.....	4,659.27
Glassware.....	20,393.96
Glove leather.....	13,758.15
Hides.....	1,419.19
Horsehair cloth.....	9,911.89
Leather gloves.....	171,330.00
Linen goods.....	110,855.80
Liquors.....	1,097.69
Miscellaneous.....	4,797.36
Palm-leaf decorations.....	1,814.76
Paper frames and boxes.....	770.89
Porcelain.....	106,662.37
Reamets.....	373.21
Rags.....	2,415.66
Silk mixed goods.....	52,461.13
Spelter.....	1,856.09
Straw covers.....	3,208.78
Tacks.....	1,979.48
Tin foil.....	3,779.27
Toys.....	6,211.24
Willows.....	464.27
Woolen goods.....	32,441.38
Zinc dust.....	4,900.67
Total.....	592,041.28

Brunswick.

Asphalt.....	5,685.35
Birds and animals, live.....	8,685.57
Binocular glasses.....	1,005.80
Books and printed matter.....	4,026.25
Chemicals, colors, etc.....	53,148.97
Glass.....	15,721.80

Gloves (leather).....	\$100,676.15
Cement (portland).....	5,431.40
Paper.....	1,278.30
Provisions and vegetables (canned)...	5,559.65
Sugar:	
Raw and beet.....	2,103.45
Refined.....	94,846.33
Sausage.....	2,095.83
Sundries.....	3,755.40
Total.....	304,120.25

Cassel.

Barytes.....	6,625.52
Baskets.....	1,596.98
Clay.....	9,506.90
Colors, chemicals, etc.....	531.08
Earthenware.....	2,187.22
Gloves.....	8,165.75
Glue.....	2,146.90
Iron and metal ware (corset steels, capsules for bottles, etc.).....	6,362.43
Linen and cotton goods.....	650.95
Miscellaneous or sundries.....	689.15
Paper.....	7,746.27
Portland cement.....	8,622.95
Toys.....	1,653.68
Woolen clothing and flannel.....	1,201.70
Wool.....	3,085.95
Total.....	60,873.43

Coburg.

Baskets.....	1,710.32
Cotton goods.....	3,084.60
Dolls and toys.....	30,063.46
Drugs, chemicals, paints, etc.....	24,290.66
Glassware.....	23,917.49
Gloves (kid).....	8,804.42
Guns.....	4,803.46
Mineral water.....	17.49
Papier-maché ware and fancy goods.....	853.18
Porcelain.....	120,390.99
Steel and ironware.....	2,257.68
Wine, beer, and brandies.....	6,496.52
Wooden ware.....	494.56
Total.....	207,547.21

Cologne.

Aniline salt and colors.....	36,847.30
Chemical apparatus.....	6,228.70
Chocolate and confectionery.....	36,676.37
Clay pipes and clay.....	4,484.91
Cologne water.....	1,444.64
Dyes, chemicals, and colors.....	37,346.50
Earthenware.....	57,747.53
Horn strips.....	977.11
Iron (spiegel and bar).....	2,450.81
Leather and leather goods.....	60,928.52
Machinery.....	559.30
Mineral water.....	139,591.49
Orange mineral and red lead.....	26,219.12
Paper and paper ware.....	495.41
Potash.....	60,928.02
Silk velvets and plushes (cotton mixed).....	71,077.04
Soaps and essences.....	1,774.28

Steel wire and rods.....	\$22,783.45
Sundries.....	15,472.93
Wine.....	52,171.80
Zinc white and zinc oxide.....	14,769.74
Total.....	650,974.97

Crefeld.

Cotton goods.....	26,118.43
Dyes and chemicals.....	16,671.72
Paper ware, lithographs, etc.....	17,688.96
Ribbons.....	63,798.89
Silks.....	47,930.36
Silks containing cotton.....	242,779.97
Spun silk.....	42,462.88
Sundries.....	9,779.20
Velvets of cotton.....	19,020.49
Velvets and plushes (silk and cotton).....	669,794.79
Total.....	1,156,045.19

Dansig.

Amber goods.....	467.18
Books.....	635.06
Rhodan balium.....	230.16
Wearing apparel.....	188.24
Total.....	1,520.64

Dusseldorf.

Artists' colors.....	1,602.28
Books.....	2,397.28
Bottles, empty.....	19,727.62
Caps and cartridges.....	2,328.83
Chemicals and dyes.....	19,835.75
Church robes and ornaments.....	131.82
Cooking utensils.....	182.10
Hardware.....	3,211.37
Instruments (surgical).....	296.45
Iron and steel.....	25,098.43
Italian cloth.....	238.00
Machinery and parts of.....	79,203.44
Mineral water.....	858.83
Paintings (oil and water color).....	4,130.45
Paper parchment.....	5,581.05
Shirt bosoms, linen and cotton.....	574.39
Silk and cotton mixed goods.....	12,113.58
Toys and fancy goods.....	814.69
Ultramarine.....	606.08
Wine.....	701.57
Woolen cloth.....	26,816.59
Miscellaneous.....	616.03
Total.....	207,066.63

Eibenstein.

Baskets.....	882.73
Brushes.....	966.94
Chemical colors.....	1,704.37
Gloves (leather).....	110,967.18
Laces and tidies.....	4,350.37
Lace curtains.....	16,575.00
Leather, dyed.....	2,839.72
Musical instruments.....	208.58
Paper and paper ware.....	31,184.34
Trimmings.....	23,249.67
Toys.....	273.70
Total.....	192,202.60

Essen.

Books.....	\$2,143.91
Chemicals and dyes.....	13,042.33
Church robes and ornaments.....	131.82
Hardware.....	1,132.46
Iron and steel.....	21,826.68
Italian cloth.....	238.00
Machinery and parts of.....	79,041.60
Shirt bosoms, linen and cotton.....	574.39
Toys and fancy goods.....	814.69
Ultramarine.....	606.08
Wine.....	202.95
Woolen cloth.....	26,816.99
Total.....	146,561.90

Frankfort.

Albums, books, photographs, etc.....	20,579.21
Asbestos.....	1,394.31
Buttons.....	1,442.83
Clay.....	9,324.95
China, porcelain, and glassware.....	10,075.02
Cement.....	27,867.66
Colored and photographic paper.....	37,115.76
Downs and feathers.....	358.69
Dyes, drugs, chemicals, etc.....	434,673.92
Fancy goods and toys.....	47,649.39
Fancy paper.....	3,390.48
Hatters' fur.....	23,277.92
Hair, prepared and raw.....	58,709.49
Hares' hair.....	11,718.55
Hops.....	1,241.76
Ironware.....	3,016.10
Instruments.....	1,436.41
Leather, hides, and skins.....	234,633.03
Leather goods.....	10,804.51
Linen, woolen, and cotton goods.....	5,104.20
Machinery and tools.....	6,123.99
Mineral water.....	7,032.38
Jewelry.....	1,787.88
Music, musical strings, and instruments.....	414.16
Optical goods.....	12,971.13
Oil paintings.....	30,315.45
Platina wire and platinum.....	103,871.55
Capsules.....	878.18
Seeds and plants.....	3,521.90
Silk and silk goods.....	433.34
Slipper forms.....	413.86
Smokers' articles.....	5,740.73
Soap.....	2,264.69
Sundries.....	8,165.24
Wine, liquors, etc.....	20,378.46
Sausages.....	3,286.61
Silverware.....	13,664.04
Wool.....	26,998.37
Clocks, etc.....	200.09
Total.....	1,192,276.24

Freiburg.

Buttons.....	18,304.35
Books and religious articles.....	9,660.40
Chemicals.....	37,659.45
Clocks.....	11,432.80
Cotton and woollens.....	74,364.40

Engraved rollers.....	\$12,080.80
Elastic webblings.....	313.45
Leather.....	1,150.05
Machinery.....	5,454.80
Organs and musical instruments.....	4,658.10
Paper hangings and wall paper.....	1,262.90
Photographs.....	4,089.35
Silks and silk ribbons.....	12,795.95
Steel wool and shavings.....	1,384.50
Surgical instruments.....	205.60
Thread (cotton).....	680.35
Total.....	195,696.65

Fürth.

Bronze powder, aluminium, and leaf metal.....	74,001.86
Brushes and raw hair.....	2,632.71
Books, stationery, and advertising cards.....	5,905.53
Fancy goods and toys.....	133,054.16
Glass (plate, window, and mirror).....	488,171.02
Gold, silver, and metal paper.....	12,238.18
Household goods.....	1,592.49
Optical goods and mathematical instruments.....	4,474.07
Sundries.....	12,854.78
Total.....	734,924.80

Gera.

Chemicals.....	3,191.34
China ware.....	26,367.07
Machinery.....	2,491.66
Ivory buttons.....	3,649.19
Leather.....	2,905.28
Leather gloves.....	44,819.25
Miscellaneous.....	1,321.78
Musical instruments.....	2,217.40
Woolen goods.....	540,802.59
Total.....	627,765.56

Glauchau.

Blankets, cotton.....	677.92
Boxes, cardboard.....	156.95
Buttons (ivory).....	179.23
China.....	18,434.81
Cloakings.....	190.66
Dress goods.....	1,054,998.07
Gloves (kid).....	18,365.68
Gentlemen's cloth.....	894.30
Hosiery:	
Cotton.....	55,166.13
Silk.....	8,784.96
Woolen.....	5,347.66
Linings.....	1,895.91
Stoneware.....	973.90
Underwear:	
Cotton.....	1,126.02
Silk.....	1,316.14
Woolen.....	1,238.05
Yarn.....	8,882.59
Total.....	1,178,629.00

Guben.

Glassware.....	\$24,637.44
Linen goods.....	164,865.86
Orocerite.....	3,234.55
Woolen cloth.....	65,857.99
Sundries.....	138.86
Total.....	258,734.70

Hamburg.

Animals.....	214.20
Basket and cane ware, and rattan.....	71,670.29
Beet (raw) and grape sugar.....	206,574.29
Bristles, feathers, and horsehair.....	11,023.98
Canned meat, fish, and vegetables.....	740.77
Cotton and cotton goods.....	979.04
Coffee.....	51,117.22
Chemicals, drugs, dyes, colors, paints, etc.....	133,500.18
Dried fruits and vegetables.....	894.97
Eggs and albumen.....	1,632.68
Fancy goods and objects of art.....	13,106.08
Gutta-percha:	
Paper and manufactures.....	9,489.03
Crude.....	26,353.44
Grains, plants, seeds, and fruits.....	51,464.45
Herrings and other fish.....	4,825.88
Human and animal hair.....	17,951.96
Haircloth.....	16,911.63
India and hard rubber:	
Crude.....	60,254.81
Manufactured.....	4,085.59
Ivory, raw.....	5,602.88
Leather, raw.....	2,809.19
Leather goods (galoches) and glue stock.....	9,273.49
Liquors (malt and distilled), wines, mineral waters, and fruit juices.....	7,650.49
Margarin and stearin.....	12,710.43
Miscellaneous.....	8,555.96
Metal:	
Goods and hardware.....	7,089.43
Raw.....	52,385.19
Musical and scientific instruments.....	4,909.28
Paper.....	10,470.51
Manufactures of.....	2,221.13
Portland cement.....	367,655.54
Rags, waste paper, cuttings, and bagging.....	87,827.99
Raw hides and skins.....	32,910.76
Rennets, guts, and bladders.....	7,641.21
Salt.....	685.89
Silk and silk goods.....	635.79
Tobacco (manufactured).....	192.08
Wood.....	9,013.96
Manufactures of.....	13.42
Wool.....	32,669.90
Woolen goods.....	1,083.23
Total.....	1,346,798.24

Hanover.

Ammunition and matches.....	9,465.85
Asphalt.....	13,157.08
Birds (pet animals).....	8,364.67
Cement, portland.....	98,245.88
Chemicals.....	16,788.90

Clay pipes.....	\$765.51
Down (feathers).....	2,979.64
Earth (manufactured).....	1,615.79
Filtering apparatus.....	170.58
Glassware.....	285.00
Gloves.....	8,914.29
Glue.....	497.02
Grease (wool).....	7,990.33
Hams and sausages.....	1,697.63
Hides.....	3,579.38
Instruments (scientific).....	1,855.16
Lamp black (printers'), etc.....	3,071.66
Linen.....	4,168.28
Lithography.....	4,609.94
Miscellaneous.....	290.53
Paper stock.....	34,197.88
Rubber goods.....	14,582.72
Silk goods.....	12,574.60
Straw goods.....	827.38
Velvets.....	6,362.95
Total.....	257,058.65

Kehl.

Ammunition (revolver).....	1,323.15
Books, stationery, and paper ware....	5,081.39
Bronze powder.....	258.23
Chicory and substitute for coffee.....	2,471.98
China, glass, porcelain, stone, and earthen ware.....	16,362.43
Dyes, drugs, chemicals, etc.....	10,009.07
Flowers (artificial).....	622.46
Fruits (preserved, candied, and dried)..	4,263.56
Glassware (watch and spectacles).....	12,362.59
Hair:	

Prepared and raw.....	3,363.80
Nets.....	184.95

Hats (straw, palm, and panama).....	3,243.53
Household goods and personal effects..	2,062.50
Ironware, steel, cutlery, etc.....	2,419.41
Leather, hides, skins, etc.....	48,522.10
Lithographs.....	700.12
Papier-maché articles.....	2,738.71
Pasteboard goods and paper boxes....	1,493.48
Silk goods, velvets, plushes, etc.....	26,344.84
Smokers' articles, snuff, etc.....	578.05
Goose-liver pastry.....	588.31
Watches, clocks, and parts of.....	194.48
Wine, brandy, beer, and liquor.....	1,475.72
Woolen goods.....	64,998.35
Total.....	211,662.52

Kiel.

Glazed paper.....	1,175.50
Musical instruments.....	169.95
Patent ship's-bottom paint.....	286.63
Pepsin bitters.....	247.59
All other.....	648.44
Total.....	2,528.11

Königsberg.

Amber and ambroid.....	10,020.84
Books.....	382.92
Bristles.....	26,687.47
Cattle hair.....	10,781.02

Hemp and hemp tow.....	\$15,627.15
Rags.....	15,276.98
Rubber shoes (old).....	9,475.15
Seeds.....	31,905.40
Total.....	120,156.93

Leipsic.

Books, periodicals, newspapers, etc. ..	127,575.24
Bristles.....	257,661.08
Chromos and fancy paper.....	34,395.20
Essential oils, chemicals, drugs, etc...	113,506.44
Fruit juice.....	1,553.14
Furs and skins.....	471,653.53
Instruments (musical, optical, scientific, etc.).....	32,720.19
Leather gloves.....	45,630.00
Machinery and ironware.....	50,082.98
Music (printed).....	13,013.38
Sugar (beet).....	2,299.61
Woolens, dress goods, carpets, covers, yarns, etc.....	140,207.04
All other articles.....	3,214.53
Total.....	1,293,517.36

Lübeck.

Ironware.....	385.50
New cloth clips.....	2,043.60
Old rubber shoes.....	4,867.60
Preserves.....	590.45
Skins.....	237.39
Wines.....	855.00
Total.....	8,979.54

Magdeburg.

Accordions.....	4,905.92
Caps and detonators.....	8,035.09
Cherries (juice and preserved).....	1,699.93
Chicory.....	3,480.80
Chlorate of potash.....	3,640.33
Dental materials.....	2,065.48
Earthen and hollow ware.....	2,225.74
Gelatin.....	2,426.97
Kainit.....	64,627.27
Kieserite.....	3,802.28
Lambskins.....	5,572.76
Leather gloves.....	132,534.41
Machinery.....	612.47
Manure salt.....	23,781.33
Muriate of potash.....	240,244.59
Potatoes.....	130.90
Saccharine.....	11,033.68
Seeds.....	1,261.19
Sauerkraut.....	1,391.87
Sugar:	
Raw.....	366,733.39
Refined.....	70,301.99
Sulphate of potash.....	24,768.20
Total.....	975,276.59

Mannheim.

Cement.....	39,973.55
Chemicals and colors.....	503,609.81
Cloth.....	977.96

Corks.....	\$4,442.75
Feathers and downs.....	4,399.76
Filtering machinery.....	3,024.55
Material.....	1,614.71
Gelatin.....	1,944.64
Glue.....	4,647.49
Leather.....	358,666.11
Leather grease (degras).....	606.23
Machinery.....	279.65
Miscellaneous.....	1,690.74
Paper.....	355.60
Pitch.....	362.50
Pumice stones.....	508.93
Plate glass.....	7,426.57
Rags, baggings, and new cuttings.....	6,743.36
Sheep casings (salted).....	2,386.99
Surgical instruments.....	373.10
Tobacco.....	564.00
Varnish.....	303.84
Wine and brandy.....	5,998.98
Wood pulp.....	87,990.27
Total.....	1,038,912.09

Markneukirchen.

Embroideries:	
Cotton.....	2,698.22
Linen.....	4,150.81
Musical instruments and strings.....	190,862.00
Machines.....	814.68
Shell goods.....	3,252.20
Total.....	201,777.91

Mayence.

Agate ware, jewelry, and imitation jewelry.....	113,806.33
Caps and tin foil.....	1,845.25
Cement.....	84,875.92
Chemicals.....	72,383.44
Colors.....	30,154.77
Glue.....	13,704.00
Hops.....	4,097.59
Leather.....	27,969.32
Preserved fruits.....	6,093.35
Saws.....	1,536.26
Straw pulp.....	4,185.48
Toy books.....	1,635.83
Wine.....	132,396.92
Woolen goods.....	3,674.23
Sundries.....	4,827.46
Total.....	503,186.15

Munich.

Antiquities.....	1,509.87
Artificial flowers.....	4,300.21
Beer.....	18,207.14
Books.....	2,928.72
Bronze powder.....	898.90
Brushes.....	8,036.86
Chemicals and apparatus.....	2,349.73
Chromos.....	12,141.64
Colors.....	1,893.69
Clocks.....	595.00
Furniture.....	535.50
Glass paintings.....	20,942.74

Gold, silver, and metal paper.....	\$3,262.77
Journals.....	2,375.15
Leather.....	1,792.64
Leather gloves.....	47,367.37
Linen ware.....	2,219.17
Metal ware.....	5,439.82
Oil paintings.....	68,028.23
Personal effects.....	4,426.80
Philosophical instruments.....	1,236.98
Photographs.....	2,299.17
Porcelain.....	958.25
Statuary.....	3,135.17
Sundries.....	2,961.20
Total.....	219,842.82

Neustadt.

Beer.....	7.15
Clocks and clock materials.....	22.86
Cherries.....	3,270.07
Furniture (household goods).....	1,471.90
Glassware (hollow), watch crystals, spectacle glasses, etc.....	83.31
Gun wads.....	409.76
Lead (tin).....	278.86
Metal wreaths and ware.....	1,389.17
Oil.....	4.55
Paper.....	4,388.24
Porcelain ware.....	142.36
Wines and brandies.....	38,379.70
Woolen and worsted cloths and clothing.....	2,733.80
Total.....	52,581.73

Nuremberg.

Beer.....	11,343.99
Brushes and hair pencils.....	4,569.70
Bronze powder and metal leaf.....	67,246.55
Books and paper ware.....	49,927.17
Carbons for arc lamps.....	14,994.36
Clay.....	735.64
China ware and glassware.....	39,171.18
Decalcomania.....	12,541.87
Drugs.....	4,782.45
Fancy goods and toys.....	18,395.22
Gold paper.....	540.93
Gas-burners.....	2,681.79
Hair (animal) and bristles.....	10,445.85
Hops.....	10,016.83
Instruments.....	18,504.48
Ironware.....	3,991.80
Leather goods.....	4,303.17
Leonic ware.....	9,319.61
Linen and cotton ware.....	7,715.74
Lithographic stones.....	26,979.36
Musical and brass wire.....	6,869.93
Optical goods.....	1,354.07
Oil paintings and chromos.....	946.83
Slate and lead pencils.....	34,373.07
Smokers' articles.....	2,023.23
Sundries.....	4,113.04
Ultramarine.....	5,630.72
Wine.....	2,868.68
Total.....	376,387.26

Plauen.

Cotton laces and embroideries.....	\$91,271.31
Flouncings.....	1,800.00
Stuffs.....	6,800.90
Carpets and covers.....	24,359.60
Combination articles:	
Cotton.....	19,967.60
Linen.....	7,527.02
Silk.....	4,225.66
Hosiery:	
Cotton.....	50,922.92
Woolen.....	19,428.03
Lace curtains.....	8,450.71
Miscellaneous.....	3,682.48
Mufflers.....	1,034.06
Silk laces and embroideries.....	10,972.44
Skin gloves.....	1,872.43
Woolens:	
Dress goods.....	378,927.83
Shawls.....	8,084.28
Mantel cloth.....	4,675.87
Total.....	644,002.13

Sonneberg.

Baskets.....	274.89
Dolls and toys.....	559,252.39
Drugs, chemicals, paints, etc.....	2,973.31
Glassware.....	14,385.27
Gloves (kid).....	3,949.85
Paintings.....	1,923.37
Paper ware.....	824.50
Papier-maché ware and fancy goods..	3,500.50
Porcelain.....	314,541.47
Slate pencils.....	11,180.84
Steel and ironware.....	769.44
Wine, beer, and brandies.....	121.53
Woolens.....	9,345.08
Sundries.....	768.41
Total.....	923,828.65

Stettin.

Amber goods.....	3,085.82
Cellulose.....	2,600.78
Cement (portland).....	128,025.04
Chicory.....	147.54
Dextrin.....	9,618.08
Fire-clay goods.....	506.35
Glucose.....	80.84
Herrings (salted).....	12,083.63
Indigo (auxiliary).....	813.45
Kegs (empty).....	268.59
Lead (pig).....	22,071.45
Naphthalene balls.....	447.68
Oil of almonds.....	176.90
Ozocerite.....	9,320.46
Potash.....	1,780.60
Parchment paper.....	5,997.19
Powder glue.....	559.51
Rags and old jute bagging.....	13,522.32
Starch (potato).....	12,959.72
Spelter.....	3,454.38
Wax (mineral).....	1,885.41
Wool.....	643.57
Total.....	230,180.11

Stuttgart.

Chicory.....	\$21,560.32
Colors.....	14,104.65
Corsets.....	24,352.21
Cotton goods.....	1,149.82
Drugs and chemicals.....	23,634.87
Illustrated periodicals and books.....	13,316.70
Jewelry.....	11,798.85
Land produce.....	2,761.80
Leather.....	1,386.73
Linen goods.....	1,279.27
Metal ware.....	5,188.38
Miscellaneous.....	32,504.35
Musical instruments.....	33,441.58
Paper.....	568.09
Professional and scientific instruments	12,506.04
Pumice stones.....	1,150.23
Watchmen's detectors.....	1,308.33
Wine and liquors.....	95.60
Wooden ware.....	1,243.85
Woolen ware.....	148,077.60
Total.....	351,429.27

Weimar.

Booklets.....	2,492.70
China.....	62,778.50
Dyes, drugs, and chemicals.....	6,769.18
Fancy goods and toys.....	77,673.70
Gloves.....	9,867.98
Linen, woolen, and cotton goods.....	57,017.80
Machines.....	1,129.11
Minerals.....	2,654.05
Optical goods.....	6,255.13
Seeds and plants.....	5,388.27
Smokers' articles.....	2,278.97
Sundries.....	1,267.62
Watches.....	1,486.82
Total.....	238,059.83

GIBRALTAR.

Cork wood.....	6,781.46
Corks.....	144.75
Total.....	6,926.21

GREECE.

Athens.

Antiquities.....	786.21
Bricks (fire).....	3,330.18
Cement.....	75.61
Cheese.....	277.92
Manganese iron ore.....	21,486.82
Magnesite (calcined).....	312.82
Olive oil and olives.....	270.55
Sponges.....	2,507.53
Total.....	29,047.64

Patras.

Almonds.....	82.71
Brandy.....	31.14
Cheese.....	67.66

Currants.....	\$161,569.58
Oil.....	221.16
Olives.....	1,071.08
Onions.....	390.41
Soap.....	222.90
Wine.....	14.91
Total.....	163,671.55

GUATEMALA.*Chimperico.*

Coffee.....	31,892.28
Hides.....	5,464.80
Wool, silk, etc.....	25.00
Silver dollars (sales).....	5,665.00
Iron tank.....	30.00
Total.....	43,077.08

Livingston.

Sarsaparilla.....	688.50
Bananas.....	22,307.50
Coffee.....	55,985.50
Hides.....	582.46
Deerskins.....	52.50
Rubber.....	727.00
Curios.....	7.50
Prints, returned.....	768.08
Machinery returned for repairs.....	27.50
Total.....	81,156.54

Ocos.

Coffee.....	32,211.00
Deerskins.....	264.00
Hides.....	1,223.00
Total.....	33,698.00

San José de Guatemala.

Coffee.....	9,026.54
Curios and books.....	2.50
Deerskins.....	974.08
Fur capes.....	2.50
Loose, dry hides.....	4,656.27
Personal effects.....	467.61
Rubber.....	7,407.13
Transit, engineer's.....	95.52
Treasure.....	20,005.00
Total.....	42,637.15

HAITI.*Port-au-Prince.*

Beeswax.....	112.60
Coffee.....	16,525.18
Goatskins.....	4,148.14
Gum guaiacum.....	262.40
Hides.....	4,240.22
Honey.....	190.49
Logwood.....	5,972.20
Mahogany.....	110.30
Total.....	31,561.53

HAWAIIAN ISLANDS.*Hilo.*

Ferns.....	\$64.50
Hides.....	639.95
Sugar.....	52,219.75
Total.....	52,924.20

Honolulu.

Bananas.....	7,740.08
Bitters.....	533.25
Coffee.....	59.20
Hides and skins.....	9,823.00
Horses.....	2,000.00
Household goods.....	4,195.50
Pineapples.....	1,025.80
Returned American goods:	
Empty beer kegs.....	1,748.50
Empty bottles.....	475.50
Miscellaneous merchandise.....	2,639.60
Whisky.....	2,248.00
Rice.....	56,823.16
Sugar.....	423,566.00
Sundries (Guava jelly).....	50.46
Wool.....	613.32
Total.....	513,541.37

Kahului.

Sugar.....	59,916.67
Returned goods.....	991.73
Hides.....	105.10
Molasses.....	300.00
Total.....	61,313.50

Mahukona.

Sugar.....	106,777.49
Green hides.....	422.81
Curios (Hawaiian).....	108.10
Total.....	107,308.40

HONDURAS.*Amapala.*

Crude gold.....	4,688.00
Hides.....	132.96
India rubber.....	77.52
Postage stamps.....	258.25
Samples of wood.....	5.75
Silver bullion.....	43,364.75
Specie.....	1,012.75
Total.....	49,539.98

Belise (British.)

Chicle (chewing gum).....	1,168.37
Fruit.....	28,557.45
Gold dust.....	833.75
Hides.....	1,499.51
Rubber.....	1,214.59
Total.....	33,273.67

Bonacco.

Bananas.....	1,808.75
Plantains.....	1,007.50

Cocoanuts.....	\$2,326.00
Pineapples.....	15.62
Conch shells.....	41.25
Cowhides.....	3.87
Old metal.....	6.21
Parrots.....	105.00
Sponges.....	22.50
Limes.....	1.00

Total.....5,337.70

Ceiba.

Bananas.....	62,431.74
Cocoanuts.....	97.75
Limes.....	51.25
Mangoes.....	15.25
Oranges.....	1,161.81
Plantains.....	10.00
Pineapples.....	6.00

Total.....63,773.80

Puerto Cortez.

Bananas.....	131,300.00
Coffee.....	14,147.40
Deerskins.....	4,965.20
Hides (ox).....	2,058.36
Hide cuttings.....	78.10
Paper cases returned.....	625.00
Personal effects.....	500.00
Rubber.....	2,073.00
Sarsaparilla.....	17,240.10

Total.....172,987.16

Ruatan.

Cocoanuts.....	6,915.50
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Truxillo.

Bananas.....	6,279.27
Cocoanuts.....	21.34
Deerskins.....	7,135.22
Hides (beef).....	8,379.00
Hide cuttings.....	43.67
Oranges.....	390.00
Rubber.....	2,353.40
Sarsaparilla.....	9,781.05

Total.....34,382.95

Uvilla.

Cocoanuts.....	8,534.68
Plantains.....	6.00
Limes.....	117.50

Total.....8,658.18

ITALY.

Ancona.

Raw silk.....	8,845.15
Artistic earthenware.....	151.13
Asphaltum.....	2,451.10
Argols.....	3,888.85

Total.....15,336.23

Bari.

Almonds.....	\$11,147.20
Argols.....	19,372.50
Olive oil.....	7,192.65
Seeds.....	2,820.35
Soap.....	3,381.15
Soap stock.....	1,370.25

Total.....45,274.10

Bologna.

Bee queens.....	15.44
Furniture.....	269.32
Hemp and tow.....	22,870.86
Medicines.....	181.42
Rush baskets.....	328.80
Sausage.....	170.43
Seeds.....	4,673.95
Straw hats and straw plaitings.....	8,171.82

Total.....36,682.04

Cagliari.

Unwashed wool.....	1,723.33
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Carrara.

Marble:	
Blocks.....	105,226.23
Slabs.....	37,117.90
Tiles.....	7,265.87
Worked.....	7,301.84
Statuary.....	15,546.15
Mosaic cubes.....	3,041.08
Miscellaneous.....	173.39

Total.....175,672.46

Castellamare di Stabia.

Beans.....	2,628.04
Cheese.....	31,992.08
Chick-pease.....	2,678.93
Filberts.....	6,983.22
Garlic.....	7,449.00
Lemons.....	4,758.12
Lentils.....	1,136.20
Lupines.....	245.87
Macaroni.....	87,142.38
Olive oil.....	5,028.06
Oranges.....	1,716.30
Sundries.....	1,575.87
Wild marjoram.....	381.75
Wine.....	530.93

Total.....154,236.75

Catania.

Almonds.....	11,023.41
Asphalt rock.....	16,952.00
Brimstone.....	6,879.18
Filberts.....	770.00
Sulphur:	
Flowers.....	216.60
Ground.....	1,833.33
Hair (cattle) limed.....	456.68
Lemons.....	7,916.14
Mustard seed.....	1,498.75
Wine lees.....	2,014.29

Total.....51,539.88

Civita Vecchia.

Cheese (sheep)..... \$20,030.46

Florence.

Alabaster statuary..... 15,578.00
 Antiquities..... 3,617.00
 Books..... 1,901.00
 Bronzes..... 516.00
 Furniture..... 14,409.00
 Household goods..... 484.00
 Jewelry..... 3,634.00
 Majolica..... 4,978.00
 Marble statuary..... 36,296.00
 Mosaics..... 1,837.00
 Olive oil..... 693.00
 Paintings..... 30,389.00
 Photographs..... 511.00
 Porcelain..... 1,763.00
 Silverware..... 615.00
 Skins..... 1,751.00
 Straw:
 Braids..... 48,361.00
 Hats..... 2,167.00
 Unclassified..... 85,645.00
 Terra cotta..... 580.00
 Wine..... 6,455.00
 Total..... 262,230.00

Genoa.

Anchovies..... 2,479.77
 Candied fruits..... 571.61
 Castor oil..... 734.74
 Cheese..... 13,379.09
 Coffee..... 182.26
 Cream of tartar..... 11,425.80
 Earthenware..... 119.79
 Filigree..... 1,634.92
 Fish (in oil)..... 2,231.91
 Garlic..... 178.03
 Glassware..... 79.15
 Gloves..... 3,378.04
 Glycerin..... 9,300.62
 Gum..... 476.80
 Leaves..... 372.35
 Liquors..... 792.85
 Macaroni..... 7,312.39
 Machinery..... 1,045.36
 Marble, works of..... 2,633.09
 Mushrooms..... 1,044.38
 Olive oil..... 45,543.78
 Olives..... 19.80
 Peppers..... 33.80
 Rice..... 4,077.19
 Sausages..... 90.30
 Silk..... 25,112.95
 Skins..... 954.67
 Soap..... 987.32
 Sweets..... 30.88
 Talc..... 1,435.84
 Tamarind..... 105.79
 Velvets..... 684.49
 Waste (cotton)..... 56,443.11
 Wine..... 5,335.52

Wooden ware..... \$138.96
 Wool..... 215.25
 Miscellaneous..... 275.60

Total..... 200,788.23

Girgenti.

Brimstone..... 301,365.07
 Shelled almonds..... 3,688.28
 Sundries..... 25.99
 Total..... 305,079.34

Leghorn.

Alabaster works..... 1,896.46
 Argols..... 49,700.46
 Anchovies..... 4.44
 Boracic acid..... 2,538.83
 Briar wood..... 3,503.39
 Books..... 271.95
 Citron (candied)..... 35,767.78
 Cheese..... 17,435.89
 Fruits (dry)..... 1,336.85
 Glass plates..... 1,121.88
 Garlic..... 2,447.84
 Glycerin..... 1,489.16
 Hemp..... 9,001.11
 Iron ore..... 17,440.35
 Juniper berries..... 474.36
 Macaroni..... 58.63
 Marble:
 Blocks..... 4,503.35
 Statuary..... 115.81
 Olive oil..... 81,733.86
 Olive nuts..... 601.87
 Orris root..... 2,169.66
 Pumice stone..... 8,715.19
 Rags..... 30,046.96
 Soap..... 28,205.65
 Soap stock..... 13,010.59
 Sienna earth..... 189.46
 Sausages..... 275.44
 Talc..... 369.59
 Umber earth..... 2,824.58
 Wool..... 30.88
 Wine..... 2,155.69
 Miscellaneous..... 196.33

Total..... 319,634.27

Licata.

Brimstone..... 52,451.94

Marsala.

Beans..... 5.36
 Garlic..... 36.58
 Salt..... 882.62
 Wines..... 664.95

Total..... 1,589.51

Messina.

Argols..... 83,043.64
 Almonds..... 6,826.79
 Anchovies..... 507.39
 Beans..... 62.53
 Capers..... 16.21

Cheese.....	\$128.34
Essences.....	40,773.89
Filberts.....	64,869.26
Garlics.....	49.22
Hair.....	696.92
Lemons.....	51,871.37
In brine.....	922.53
Juice.....	9,315.77
Oil.....	10,510.25
Licorice paste.....	212.30
Lupines.....	46.32
Macaroni.....	268.17
Melons.....	77.20
Mustard seed.....	1,073.08
Olives.....	22.73
Oil.....	5,208.38
Onions.....	81.06
Pistachio nuts.....	832.08
Pumice stone.....	2,678.33
Pennyroyal.....	2.12
Silk.....	15,247.40
Squills.....	148.61
Vinegar.....	103.73
Wine.....	218.95
Wine lees.....	5,152.10
Total.....	300,966.67

Milan.

Blankets.....	309.12
Books.....	1,348.11
Buttons.....	13,252.15
Carriage goods.....	676.07
Cheese.....	9,359.95
Cotton and silk manufactures.....	59,665.80
Colors.....	2,525.49
Colored images.....	969.81
Gloves.....	32,200.19
Hair (horse).....	4,574.12
Hatbands.....	5,690.97
Hemp carpet.....	9,688.61
Hides.....	2,964.17
Household goods.....	779.69
Horn hairpins.....	132.39
Liquors.....	5,647.23
Medicines.....	1,376.06
Olive oil.....	672.79
Paintings.....	1,242.92
Paper.....	384.28
Rubber goods.....	1,721.47
Silk:	
Bonnets.....	907.43
Manufactured.....	15,138.87
Raw.....	1,344,316.66
Silk and cotton bonnets.....	769.52
Waste.....	3,365.00
Soap.....	506.84
Statuary.....	193.00
Wine.....	512.46
Wool manufactures.....	2,264.48
Total.....	1,523,155.65

Naples.

Argols.....	63,000.28
Beans.....	18,584.92
Bird feathers.....	228.00

Bronzes.....	\$2,226.51
Bulbs.....	1,496.19
Castings.....	39.32
Ceramics.....	396.69
Cheese.....	5,287.91
Cherries.....	13,748.89
Filberts.....	1,543.98
Furniture.....	480.75
Garlic.....	9,533.53
Gloves.....	32,979.26
Goatskins.....	3,817.05
Graffioni.....	276.00
Hazelnuts.....	5,257.79
Hemp.....	2,593.29
Household effects.....	80.00
Human hair.....	2,746.80
Licorice.....	6,319.05
Macaroni.....	4,227.84
Majolica.....	2,849.20
Mandolins.....	346.20
Milk food.....	382.37
Natural-history specimens.....	808.50
Negatives.....	108.61
Oranges.....	204.36
Paintings.....	109.40
Pease.....	1,353.00
Peppers.....	254.60
Potatoes.....	308.86
Preserves.....	3,347.96
Sandalwood.....	2,238.40
Seeds.....	6,461.11
Silk dress.....	154.40
Sulphur oil.....	8,987.33
Sundries.....	34,383.76
Strings.....	516.20
Tartar.....	5,748.87
Walnuts.....	968.54
Wine.....	2,553.19
Wool.....	1,468.22
Works of art.....	450.00
Total.....	248,851.20

Palermo.

Almonds.....	5,971.76
Artichokes.....	727.70
Cheese.....	1,131.50
Citrate of lime.....	3,641.52
Crude argols.....	4,687.73
Fish:	
Salt.....	28.30
In vinegar.....	32.83
Garlic.....	319.71
Lemons.....	406,189.20
Macaroni.....	9,646.67
Manna.....	215.59
Mustard seed.....	599.81
Olive oil.....	2,538.98
Orange peel.....	282.45
Oranges.....	2,610.71
Pease (chick).....	105.66
Preserved goods.....	636.98
Soap stock.....	5,717.39
Sumac.....	87,188.88
Tobacco.....	325.60
Wine.....	495.30

Wool.....	\$138.47
Miscellaneous.....	267.30
Total.....	533,430.04

Rodi.

Oranges.....	26,621.10
Lemons.....	1,213.54
Olive oil.....	171.20
Total.....	28,005.84

Rome.

Antique velvet.....	351.00
Books.....	166.50
Bronzes.....	2,312.71
Carved wood.....	544.26
Cheese.....	5,868.24
China goods (porcelain).....	100.36
Church goods (vestments).....	671.44
Granite.....	193.00
Liquors.....	478.64
Miscellaneous.....	4,957.35
Musical strings.....	113.96
Paintings.....	7,365.84
Professional effects.....	202.00
Sculpture (marble statuary).....	15,873.33
Sienna earth.....	1,112.17
Wine.....	1,239.06
Total.....	41,549.86

Sorrento.

Beans.....	1,326.30
Cheese.....	734.90
Filberts.....	4,173.20
Garlic.....	2,613.20
Lemons.....	34,602.90
Macaroni.....	481.60
Melons.....	292.90
Olive oil.....	2,828.40
Oranges.....	28,541.10
Tomato paste.....	102.80
Walnuts.....	1,303.10
Wine.....	97.70
Total.....	77,098.10

Trapani.

Salt.....	9,529.65
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Turin.

Haircloth.....	2,084.93
Human hair.....	2,815.98
Hats (felt).....	2,101.19
Silk:	
Manufactures.....	939.75
Raw.....	12,738.24
Skins.....	1,316.61
Talc.....	687.30
Vermuth.....	27,323.87
Wine.....	656.12
Total.....	50,657.99

Venice.

Antiquities.....	5,250.92
Books.....	592.08

Earthenware.....	\$956.07
Furniture.....	11,049.74
Glass manufactures.....	7,187.63
Glycerin.....	3,527.40
Hemp.....	14,675.43
Lace.....	80.11
Majolica.....	773.68
Matches.....	656.35
Paintings.....	9,828.72
Porcelain articles.....	220.99
Photographs.....	109.74
Silverware.....	182.33
Silk stuffs.....	829.23
Statuary (in wood).....	92.08
Straw braids.....	1,800.86
Sundries.....	944.01
Wine.....	198.18
Total.....	58,955.55

JAPAN.*Kanagawa.*

Brimstone.....	35,960.02
Cotton goods.....	4,499.59
Curios.....	154,583.14
Fish.....	119.47
Ginger.....	3,250.37
Leather.....	435.97
Manganese.....	2,376.34
Miscellaneous.....	1,448.34
Mushrooms.....	493.39
Oils.....	5,124.72
Paper.....	11,113.52
Plants.....	7,677.65
Silk:	
Goods.....	866,365.36
Raw.....	5,649,955.07
Skins.....	23,617.73
Straw braid.....	13,759.19
Tea.....	1,208,747.48
Total.....	7,989,457.35

Nagasaki.

Coal.....	14,121.78
Tea.....	8,651.55
Total.....	22,773.33

LUXEMBURG.*Luxemburg.*

Books.....	77.20
Hair.....	227.38
Lambskins.....	317.98
Leather gloves.....	51,385.89
Steel bars.....	9,169.06
Total.....	61,177.51

MADAGASCAR.*Tamatave.*

Fine pinky india rubber.....	1,056.44
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MADEIRA.*Funchal.*

Madeira wine.....	\$4,201.19
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MALTA.*Malta.*

Cumin seed.....	681.31
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MAURITIUS*Port Louis.*

Sugar.....	27,925.68
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MEXICO.*Acapulco.*

Hides.....	2,997.90
Limes.....	7,320.00
Pearl shells.....	115.97
Rubber.....	135.46
Skins.....	2,042.64
Total.....	12,611.97

Campeachy.

Bristles.....	45.12
Chicle (chewing gum).....	17,256.26
Deerskins.....	1,303.20
Hemp fiber.....	58,264.63
Hides.....	2,819.87
Total.....	79,689.08

Chihuahua.

Beans.....	2,346.25
Bullion:	
Gold.....	97,033.39
Silver.....	136,931.13
Silver and lead mixed.....	67,045.21
Copper matte.....	2,167.30
Hides (dry).....	6,593.92
Hats (fur).....	132.87
Live stock (cattle).....	1,318.59
Oranges.....	2,803.86
Ore (silver).....	60,221.36
Total.....	376,594.00

Durango.

Household goods.....	84.75
Block tin.....	3,670.13
Hides and skins.....	3,756.67
Total.....	7,511.55

Guaymas.

Anchors and chains.....	158.00
Bullion.....	171,932.00
Cyanide products.....	10,385.00
Fish skins and fins.....	264.00
Hides, dry.....	3,974.00
Leather.....	1,867.00
Machinery.....	822.00

Ores:

Silver.....	\$20,707.00
Gold.....	3,500.00
Pease, dried.....	4,651.00
Sugar.....	529.00
Zinc products.....	12,443.00
Total.....	231,239.00

Laguna de Terminos.

Alligator skins.....	108.18
Cedar.....	18,097.70
Chicle (chewing gum).....	47,466.19
Deerskins.....	733.02
Fustic.....	1,041.21
Garza plumes.....	840.25
Hides.....	2,969.24
India rubber.....	265.60
Mahogany.....	49,808.28
Samples pochote.....	15.00
Total.....	121,344.67

La Paz.

Bullion (silver).....	99,074.42
Brick (fire).....	158.43
Corn leaves.....	10.30
Damiana (herb).....	57.19
Deerskins.....	386.71
Hides.....	2,644.98
Fish fins.....	397.46
Goatskins.....	15.43
Ore dross.....	660.26
Pearl shell.....	1,525.02
Slag.....	211.24
Sulphurets.....	1,814.64
Seal skins.....	167.80
Salt.....	2.38
Tortoise shell.....	346.00
Total.....	106,872.26

Matamoros.

Asphaltum.....	15.21
Animals (live):	
Cattle.....	28,835.72
Horses.....	270.86
Mares.....	32.74
Mules.....	192.19
Asses (jennies).....	69.70
Bones and horns.....	322.19
Hair (animal).....	1,900.13
Hides.....	11,739.29
Hats (fur).....	63.36
Sugar (crude).....	545.79
Skins.....	6,542.56
Wax (bees').....	107.92
Charges.....	385.43
Total.....	51,023.09

Matatlan.

Bullion:	
Gold.....	398,928.76
Gold and silver mixed.....	4,580.82
Silver.....	233,920.68
Cigars.....	284.91

Coin:	
Gold.....	\$2,249.00
Silver.....	277,609.75
Hides.....	2,238.84
Limes.....	366.05
Personal property.....	115.00
Powder, giant (United States product returned).....	1,679.00
Precipitate of silver.....	2,735.60
Ore:	
Gold and silver mixed.....	39,754.26
Lead.....	2,037.90
Silver.....	36,247.16
Slags.....	1,407.70
Sugar (raw).....	253.40
Sulphates.....	1,262.50
Returned United States goods.....	2,159.00
Total.....	1,007,830.33

Merida.

Deerskins.....	141.70
Hair.....	65.20
Hennequen.....	138,068.20
Hides.....	459.28
Total.....	138,734.38

Mexico City.

American goods returned.....	3,122.09
Antimony.....	378.50
Bullion:	
Gold and silver.....	69,516.57
Silver.....	914.00
Silver and lead.....	4,798.84
Brown (or broom) root.....	11,014.65
Cattle horns.....	2,650.00
Cigars.....	92.00
Cutting hare.....	1,345.00
Cyanide product.....	15,124.94
Hides (dry).....	12,140.00
Mexican Government bonds.....	150,000.00
Oranges.....	225.00
Ores (gold and silver).....	563,353.40
Personal effects.....	100.00
Skins:	
Deer.....	80.00
Goat.....	650.00
Kid.....	7.20
Total.....	835,500.19

*Monterey.**

Argentiferous lead.....	2,777,646.98
Copper matte.....	136,819.81
Skins of all kinds.....	74,968.34
Beef hides.....	74,630.76
Silver-lead ore.....	17,151.00
Cattle.....	14,727.00
Guano.....	6,046.79
Animal hair.....	4,903.07
Wheat bran.....	816.76
Horns.....	705.00
Shoes.....	723.41
Coffee.....	633.27

Leather.....	\$545.15
Pease (garbauths).....	535.01
Clay brick.....	309.00
Pepper.....	196.39
Garlic.....	136.00
Origanum.....	115.59
Ixtle.....	56.20
Chocolate.....	18.00
Ixtle bags.....	14.50
Total.....	3,111,698.03

Nogales.

Agricultural implements.....	100.00
Bran.....	126.00
Bullion:	
Copper.....	7,994.00
Gold.....	2,697.00
Silver.....	14,021.00
Cattle, American, returned.....	1,808.00
Coffee, substitute of.....	200.00
Feathers (in transit).....	1,650.00
Hides (dry).....	3,565.00
Horns.....	1,080.00
Ores:	
Gold.....	17,216.00
Silver.....	75,217.00
Silver in transit.....	4,343.00
Pease (dried) in transit.....	679.00
Total.....	130,696.00

Nuevo Laredo.

American products returned.....	6,167.79
Animals, live:	
Steers.....	69,684.71
Cows.....	19,013.00
Bulls.....	11,694.00
Calves.....	642.00
Oxen.....	2,163.00
Horses.....	36.00
Mules.....	800.00
Hats (straw).....	452.63
Shoes.....	412.67
Manufactures of steel.....	40.33
Hides and skins:	
Hides.....	6,248.32
Goatskins.....	15,223.65
Deerskins.....	1,164.06
Wild boar skins.....	416.52
Wild-animal skins.....	187.15
Sheepskins.....	85.82
Hair (horse and cow).....	2,092.83
Total.....	136,524.48

Parral.

Ore (silver, lead, and gold).....	4,389.08
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Paso del Norte.

American products returned.....	5,297.00
Animals, live.....	2,946.00
Antiquities.....	10.00
Bran.....	142.00

* Mexican coin.

Bullion:	
Gold	\$13,562.00
Lead	4,526.00
Silver	32,123.00
Old gold and silver	532.00
Canes	42.00
Cigars	28.00
Coffee	7,367.00
Copper sheets	33.00
Earthenware	13.00
Essential oil	156.00
Feather work	4.00
Glue	13.00
Hats:	
Felt	467.00
Straw	457.00
Hides and skins	3,058.00
Jewelry	158.00
Leather shoes	66.00
Linen goods	445.00
Marble	72.00
Medicines	7.00
Nosebags	11.00
Oil paintings	117.00
Onyx	64.00
Opals	329.00
Ores	59,025.00
Silk goods	96.00
Tobacco	2,068.00
Wearing apparel	573.00
Woolen goods	38.00
Total	153,845.00

Piedras Negras.

Animals (live)	88,415.50
American cattle and horses	1,275.00
American products returned	2,617.50
Bran	2,129.00
Coal	33,531.50
Coffee	2,222.40
Feathers (heron)	400.00
Hides and skins	17,390.45
Hair (animal)	245.50
Ores:	
Silver-lead	179,562.15
Silver	15,631.30
Oil cake	742.00
Saddles (Mexican)	11.50
Sugar	350.00
Total	344,523.80

Progreso.

Chicle (chewing gum)	29,329.03
Deerskins	8,412.11
Hair	337.46
Hennequen	549,106.25
Hides	8,640.25
Total	595,825.10

Saltillo.

Hides (goat and kid skins)	9,679.18
Ixtle	26,758.49
Horsehair	633.70

Copper bullion and matte	\$46,332.37
Bran	8,329.20
Total	97,732.94

San José and Cape San Lucas.

Bark (tan)	954.00
Fin (shark)	26.00
Fruit	25.00
Hides	840.00
Skins (deer)	53.60
Sugar (brown)	1,464.64
Total	3,363.24

San Luis Potosí.

Bones	887.05
Bullion:	
Gold	36,558.78
Lead	27,422.21
Silver	349,491.36
Bran	417.65
Chile pepper	4,522.32
Coffee	3,440.00
Hair (animal)	118.80
Ixtle (fiber)	6,227.34
Linen drawn work	158.40
Pottery	120.91
Ores:	
Antimony	156.72
Silver	112,248.76
Skins:	
Cow	118.80
Goat	3,913.00
Wooden spoons	4.75
Total	546,906.85

Tampico.

Asphalt	1,810.00
American products returned	13,685.00
Bones	1,094.00
Bullion	56,659.00
Cedar logs	3,700.00
Chicle (chewing gum)	5,436.00
Coffee	10,196.00
Coin (old silver)	555.00
Fustic (dyewood)	17,322.00
Hair (horse and cow)	749.00
Hides	21,774.00
Honey	9,920.00
Ixtle (fiber)	73,792.00
Parrots	200.00
Plumes	1,172.00
Skins:	
Bird	146.00
Lizard	948.00
Wild boar	351.00
Deer	1,877.00
Goat	6,039.00
Saffron	5,700.00
Sarsaparilla	11,238.00
Turtle	
Meat (canned)	2,673.00
Green	223.00
Total	247,259.00

Torcon.

Hides and skins.....	\$2,148.66
Beef cattle.....	4,235.00
Rough onyx.....	268.43
Cotton lintens.....	879.16
Base bullion.....	126,055.26
Total.....	132,986.51

Tuxpan.

Chicle (chewing gum).....	45,681.99
Coffee.....	615.24
Fustic.....	4,110.33
Fruit (bananas and pineapples).....	21.65
Hides.....	5,235.58
Honey.....	4,075.18
Rubber.....	1,480.49
Skins:	
Deer.....	1,667.03
Hogor javalin.....	79.98
Sansaparilla.....	366.03
Vanilla.....	146,378.36
Total.....	209,711.86

Victoria.

Ittle (fiber).....	14,398.60
Parrots.....	2,810.27
Hides, dry.....	2,377.98
Bones.....	323.18
Skins:	
Goat.....	269.46
Deer.....	102.40
Hair.....	77.87
Sarsaparilla.....	72.30
Mampachies.....	26.40
Jovall skins.....	17.27
Small beasts.....	7.72
Horns.....	4.87
Total.....	20,488.32

NETHERLANDS.

Amsterdam.

Antiquities.....	8,684.50
Bulbs.....	36,821.02
Capsules (metallic).....	2,641.41
Caraway seed.....	41,223.35
Carpets (Deventer-Smyrna).....	904.11
Cassia vera.....	4,044.24
Cauliflower in brine.....	3,950.46
Cheese.....	32,052.80
Cinchona bark.....	6,081.18
Cloves.....	2,732.38
Cocoa.....	81,905.50
Beans.....	6,713.16
Butter.....	59,650.12
Coffee.....	81,375.56
Delftware (imitation).....	991.48
Diamonds:	
Polished.....	353,830.13
Rough.....	242,541.80
Garden seeds.....	4,705.86
Gastskins.....	35,335.56
Gum copal.....	2,360.40

Hides and skins.....	\$5,024.03
Indigo.....	1,932.60
Liqueurs.....	4,798.79
Mace.....	4,307.56
Nutmegs.....	46,167.61
Oil (haarlem).....	3,682.65
Paintings.....	4,930.00
Paper.....	3,312.94
Pepper.....	8,057.08
Plate glass.....	72,433.17
Rags.....	9,338.16
Rice.....	11,095.23
Rubber.....	5,319.84
Sardelles.....	4,119.57
Sugar (refined).....	188,929.56
Tin (Straits and Banka).....	385,575.53
Tobacco (Sumatra).....	1,851,421.54
Sundries.....	13,057.58
Total.....	3,632,048.46

Rotterdam.

Antiquities.....	893.60
Arrack and brandy.....	171.76
Bagging.....	4,229.40
Balances.....	1,383.00
Books and printed matter.....	338.20
Bottles and cases.....	397.57
Bulbs.....	229,282.78
Carbolem.....	1,249.70
Cassia vera.....	5,453.44
Cheese.....	19,517.94
Church symbols.....	437.62
Cocoa.....	237.97
Coffee.....	47,644.84
Earthenware.....	7,983.18
Flax and tow.....	5,702.70
Furniture.....	3,123.96
Gin.....	8,165.74
Herrings.....	1,200.00
Human hair.....	829.80
Indigo.....	2,821.69
Leather.....	327.09
Linen.....	1,496.24
Machinery.....	664.00
Madder.....	1,718.60
Matches.....	1,752.40
Mineral water.....	5,417.36
Mutton stock.....	1,348.61
Nutmegs.....	8,106.64
Oil.....	423.60
Oleo oil (returned American goods).....	88.74
Paintings.....	20,835.22
Pepper.....	265.45
Peat moss.....	2,892.38
Plants.....	318.20
Rags.....	13,054.14
Roots and herbs.....	2,334.27
Rubber.....	15,753.08
Seeds.....	1,086.23
Silverware.....	18,432.97
Skins and hides.....	9,417.45
Straw covers.....	1,484.58
Sugar.....	10,452.24
Swans.....	100.00
Tin.....	17,235.30
Tin foil.....	228.00

Tobacco.....	\$55,572.45
Vegetables in brine.....	3,238.70
Wine.....	218.42
Wool.....	1,346.38
Woolen manufactures.....	422.93
Total.....	537,096.56

Schiedam.

Candle pitch.....	153.60
Cheese.....	271.32
Gin.....	9,618.54
Herrings.....	253,678.31
Total.....	263,721.77

NICARAGUA.

Bluefields.

Bananas.....	126,928.92
Cocoanuts.....	95.79
Ginger.....	122.89
Gold dust.....	47,960.14
Lemons.....	90.30
Rubber.....	44,464.44
Shells.....	825.00
Specie.....	1,500.00
Steel (old).....	13.00
American products returned:	
Castings.....	9.38
Phonograph.....	151.04
Coil rope.....	158.62
Tank (iron).....	37.40
Whisky.....	791.42
Total.....	223,148.34

Corinto.

Coffee.....	72,857.78
Cedar logs.....	295.00
Deerskins.....	6,584.88
Hides.....	5,817.55
Mahogany.....	725.00
Rubber.....	4,988.10
Sugar.....	6,184.50
Total.....	97,452.81

San Juan del Norte.

Cocoanuts.....	91.20
Coffee.....	89,793.83
Feather plumes.....	25.00
Gold.....	3,100.00
Heron plumes.....	165.00
Hides.....	6,072.74
Rubber.....	25,258.56
Skins:	
Deer.....	5,665.80
Tiger.....	5.14
Total.....	130,177.27

PERU.

Callao.

Sulphide of silver.....	21,693.82
Coca leaves.....	8,044.70

Goatskins.....	\$3,286.42
Silver ore.....	24,548.44
Wool.....	1,437.81
Coffee.....	9,147.64
Silver-lead ore.....	3,307.23
Lead.....	1,944.00
Chloride of copper.....	886.60
Copper ore.....	577.18
Caoutchouc.....	97.20
Phonograph (returned goods).....	96.20
Cotton.....	1,314.22
Compound of silver.....	4,131.00
Res. sulphide of silver.....	72.90
Total.....	80,685.36

RUSSIA.

Abo (Finland).

Pipes for smoking.....	45.33
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Batoum.

Licorice root.....	115,151.28
Salted guts.....	238.62

Total.....	115,389.90
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Helsingfors.

Printed books.....	267.86
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Libau.

Goatskins.....	36,229.57
Wool.....	342.05

Total.....	36,571.62
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Moscow.

Calfskins.....	22,542.29
Camels' hair.....	17,096.96
Crash.....	13,134.40
Flax.....	17,919.50
Goatskins.....	109,758.50
Horsehair cloth.....	101.91
Horsehides.....	263.79
Horse manes.....	28,261.29
Licorice root.....	206.90
Rubber waste.....	433.73
Silverware.....	91.87
Skins (dry).....	64,767.03
Tea.....	157.49
Wool.....	120,399.79

Total.....	395,135.45
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Odessa.

Buffalo hides.....	2,279.36
Goatskins.....	8,189.60
Goloches (old).....	761.43
Millet seed.....	1,361.64
Wool.....	68,584.84

Total.....	81,176.87
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Poti.

Manganese ore.....	251,070.78
Licorice root.....	12,079.42

Total.....	263,150.20
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Riga.

Albumen	\$4,542.23
Books (Hebrew).....	8,135.14
Cork shavings.....	1,394.97
Hemp.....	37,903.97
Liquors.....	568.89
Objects for divine service.....	495.43
Rubber waste.....	3,289.71
Skins.....	36,525.50
Wool.....	8,019.54
Total.....	100,815.38

Rostoff.

Wool.....	39,180.10
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St. Petersburg.

Albumen (blood).....	5,250.00
Birch oil.....	309.12
Boltropes.....	10,642.75
Books.....	157.12
Bristles.....	48,895.59
Bronzes.....	687.50
Crash.....	3,556.72
Down.....	897.24
Dressed leather.....	489.19
Goatskins.....	73,058.12
Household effects.....	6,000.00
India-rubber shoes (old).....	2,253.92
Isinglass.....	1,105.00
Kimmel (liquor).....	77.50
Mats.....	487.00
Oakum (tarred).....	11,321.25
Paraffin.....	1,466.28
Sheet iron.....	22,144.07
Sundries.....	6,369.00
Tow.....	1,685.90
Wool.....	326.71
Total.....	196,980.08

Warsaw.

Furs.....	75.88
Hebrew books.....	319.20
Leather.....	148.00
Hops.....	143.40
Books.....	315.23
Ground wax.....	548.00
Total.....	1,549.71

SAMOA.

Apia.

Copra.....	3,816.70
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SIAM.

Bangkok.

Rice.....	13,208.23
Teak.....	353.28
Total.....	13,562.51

SPAIN.

Alicante.

Shelled almonds.....	\$19,722.70
Mats (esparto grass).....	355.60
Licorice root.....	23,511.66
Silk-worm gut.....	67.95
Total.....	43,657.90

Almeria.

Grapes.....	28,718.54
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Barcelona.

Basils.....	1,564.00
Fishing hair.....	830.10
Glycerin.....	32,749.18
Licorice.....	29,542.23
Mineral water.....	2,354.26
Red pepper.....	323.00
Returned bags.....	19,200.00
Skins.....	9,917.53
Tartar.....	21,678.05
Wine.....	363.51
Wool.....	3,013.36
Sundries.....	3,426.00
Total.....	124,961.22

Bilbao.

Red and white wine.....	239.74
Red wine.....	156.02
Iron ore.....	6,439.87
Calcined.....	4,996.11
Total.....	11,830.74

Cadiz.

Sherry wine.....	4,580.28
Wool.....	17.56
Total.....	4,597.84

Denia.

Almonds.....	1,990.00
Fans.....	163.00
Grapes.....	137.00
Hats (palm leaf).....	2,045.00
Onions.....	28,925.00
Raisins.....	36,546.00
Total.....	69,806.00

Grao.

Hides.....	14,082.41
Onions.....	146.66
Saffron.....	2,292.98
Wine.....	1,749.15
Miscellaneous.....	2,806.37
Total.....	21,077.57

Huelva.

Cupreous sulphur ore.....	89,778.78
Iron pyrites.....	44,902.32
Total.....	134,681.10

Jeres de la Frontera.

Sherry wine..... \$64,510.61

Madrid.

Common flax..... 217.76
Goatskins..... 4,267.27
Common soap..... 794.54
Oil painting..... 47.16
Total..... 7,326.73

Malaga.

Almonds..... 44,208.98
Canary seed..... 418.93
Garlic..... 3,767.70
Lemons..... 132,047.40
Lead..... 5,449.82
Models..... 96.60
Orange peel..... 212.75
Olives..... 901.30
Pomegranates..... 218.56
Palm-leaf hats..... 23,092.43
Red pepper..... 157.08
Raisins..... 26,199.37
Soap..... 120.00
Wine..... 1,723.24
Total..... 237,914.16

Marbella.

Iron ore..... 18,374.90

Palma.

Capers..... 1,422.74
Confectionery..... 233.05
Total..... 1,655.79

Port St. Mary.

Wines..... 21,609.52

San Felis de Guixols.

Corks..... 90,183.29

San Sebastian.

Red pepper..... 241.30

Santander.

Wine..... 108.40

Seville.

Corks..... 10,771.00
Cork wood..... 19,998.00
Licorice:
Paste..... 3,908.00
Root..... 1,692.00
Lead..... 8,013.00
Olives..... 32,502.00
Sundries..... 99.00
Wine..... 947.00
Total..... 77,930.00

Tarragona.

Almonds..... 36,553.09
Wine..... 11,046.90
Total..... 47,599.99

SPANISH WEST INDIES.

CUBA.

Cienfuegos.

Cigars..... \$135.98
Hides..... 486.13
Honey..... 1 331.01
Sugar..... 716,998.49
Spars (dagame and lancewood)..... 3 170.80
Tobacco..... 23,026.71
Wood (cedar and mahogany)..... 5,534.94
Total..... 750,664.10

Habana.

Asphaltum..... 4,117.12
Beeswax..... 771.11
Birds..... 3,680.55
Cigars and cigarettes..... 526,617.89
Fruit..... 17,939.09
Hides..... 9,261.31
Honey..... 3,212.96
Metals (old copper, iron, etc.)..... 56,579.06
Molasses..... 9,862.81
Palm leaf..... 101.74
Sponges..... 28,010.28
Sugar..... 572,284.54
Sundries, provisions, etc..... 12,240.76
Tobacco (leaf)..... 3,423,071.71
Total..... 4,667,759.93

Matanzas.

Molasses..... 16,192.44
Sugar..... 1,425,957.50
Total..... 1,442,149.94

Sagua la Grande.

Sugar..... 601,553.54
Dry salted hides..... 2,432.75
Total..... 603,986.29

San Juan de los Remedios.

Sugar..... 603,241.97

Santiago de Cuba.

Beeswax..... 794.64
Cedar wood..... 5,532.32
Guava..... 632.40
Hides..... 9,207.01
Honey..... 162.13
Iron ore..... 149,260.00
Lignum-vitae..... 1,143.28
Mahogany wood..... 14,261.83
Manganese ore..... 905.43
Silver coin (old Mexican)..... 302.54
Sugar..... 129,047.46
Tobacco (leaf)..... 5,035.97
Old furniture..... 800.00
Surgical instrument..... 500.00
Total..... 317,585.01

Zaza.

Beeswax..... 1,051.15
Cedar..... 37,594.22
Copper (old)..... 265.13

Hides.....	\$399. 61
Honey.....	708. 29
Mahogany.....	6,985. 47
Sugar.....	106,668. 30
Total.....	153,672. 17

PUERTO RICO.

Arecibo.

Cane sugar.....	37,446. 36
Mexican silver coins.....	400. 00
Total.....	37,846. 36

Fajardo.

Sugar.....	18,154. 97
Molasses.....	4,824. 58
Total.....	22,979. 55

Guayama.

Bay rum.....	1,043. 89
Molasses.....	3,378. 88
Sugar.....	44,906. 51
Specie (Mexican dollars).....	279. 04
Total.....	48,908. 32

Mayaguez.

Specie.....	2,388. 35
Annotto.....	122. 12
Bay rum.....	2,358. 94
Sugar.....	44,191. 51
Cigars (in transit for England).....	235. 89
Molasses.....	4,719. 21
Cocoanuts and oranges.....	3,740. 75
Tortoise shells.....	271. 47
Total.....	58,028. 24

Naguabo.

Sugar.....	75,474. 82
Molasses.....	18,428. 54
Total.....	93,903. 34

Ponce.

Blank books.....	8. 09
Butter (returned).....	355. 68
Molasses.....	34,717. 59
Specie.....	3,535. 84
Sugar.....	17,124. 03
Typewriter.....	75. 00
Total.....	55,816. 23

San Juan.

Sugar.....	133,477. 73
Returned American goods:	
Empty iron carboys.....	76. 74
Silverware.....	179. 38
Empty wooden oil barrels.....	75. 55
Butter.....	248. 21
Total.....	134,057. 61

Vieques.

Sugar.....	19,506. 75
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SWEDEN AND NORWAY.

Bergen.

Anchovies.....	\$5,628. 54
Books, printed (Norwegian).....	422. 10
Cheese.....	2,423. 70
Cod-liver oil.....	60,802. 41
Fish:	
Dried—	
Stockfish.....	45,691. 54
Salted—	
Klipfish.....	434. 16
Herrings.....	38,659. 12
Mackerel.....	54,297. 78
Sprats.....	1,876. 68
Sprats and sardines in oil.....	7,763. 00
Nautical instruments (foghorns).....	669. 03
Preserves of fish and meat.....	4,528. 63
Silver goods.....	168. 30
Sundries.....	318. 11
Wine and spirits.....	475. 70
Wood pulp (chemical).....	11,523. 33
Total.....	235,682. 13

Christiania.

Acid (oxalic).....	4,632. 64
Books and periodicals.....	3,648. 65
Fish:	
Mackerel, sprats, etc.....	13,851. 52
Herrings and anchovies.....	1,044. 57
Hides, cured.....	3,517. 10
Matches.....	5,597. 39
Marble in blocks.....	1,116. 55
Oil (cod liver).....	17,825. 22
Personal effects.....	2,006. 88
Rope, old.....	2,274. 80
Silverware.....	223. 13
Wood pulp.....	29,038. 94
Sundries.....	1,375. 42
Total.....	86,152. 81

Christiansand.

Salted mackerel.....	5,964. 49
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Gothenberg.

Anchovies and sprats.....	572. 93
Anvils (steel).....	2,223. 81
Books (Swedish).....	773. 74
Cutlery.....	521. 21
Glassware.....	475. 50
Gloves.....	1,606. 12
Hides and skins.....	7,488. 13
Iron:	
Bars.....	14,606. 31
Nail rods.....	41,607. 06
Pig.....	19,721. 52
Scrap.....	3,590. 51
Wire rods.....	16,479. 58
Miscellaneous.....	2,361. 76
Liquors (punch and porter).....	810. 24
Matches.....	33,618. 17
Paintings.....	34,893. 53
Paper (wall).....	994. 24

Steel:	
Bars	\$370.04
Blooms and slabs.....	9,199.06
Wire rods.....	195.75
Miscellaneous.....	984.06
Sundries.....	3,006.03
Telephones and microphones.....	859.75
Wood pulp (chemical).....	14,557.65
Total.....	211,509.64

Helsingborg.

Earthenware goods.....	714.31
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Malmo.

Matches	245.76
Wood pulp.....	851.64
Machinery.....	7,276.45
Total for same quarter in 1894..	8,373.85

Stockholm.

Iron	175,457.41
Steel	136,758.53
Wire rods:	
Iron	50,482.20
Steel.....	6,894.33
Nail rods.....	35,119.79
Pig iron.....	29,901.43
Machinery.....	12,546.61
Cement.....	26,682.38
Miscellaneous.....	27,338.14
Total.....	501,180.82

SWITZERLAND.

Aarau.

Elastics	563.12
Knit goods.....	57,709.96
Scientific instruments.....	2,099.23
Silk and half-silk ribbons.....	11,137.96
Straw goods.....	81,181.93
Total.....	152,692.20

Basle.

Aniline colors.....	89,996.00
Argols.....	1,173.00
Cheese.....	4,127.00
Clothing (knit).....	27,297.00
Dyestuffs and chemicals.....	44,500.00
Hides and skins.....	94,515.00
Ribbons (silk and mixed).....	259,458.00
Silk (spun waste)	20,529.00
Watches and watch materials.....	2,268.00
Total.....	544,283.00

Berne.

Cheese.....	147,002.61
Silk tissues.....	16,187.76
Straw goods.....	7,422.20
Sundries.....	1,002.30
Underwear (silk, wool, and cotton)....	35,419.15
Watches and watch materials.....	6,331.01

Wood carvings.....	\$561.63
Horn ware.....	1,081.28
Total	215,007.94

Chauxdefonds.

Absinthe.....	13,132.50
Asphaltum.....	14,003.00
Chocolate.....	2,978.59
Swiss wine.....	607.60
Pure wine yeast.....	142.60
Stamps.....	2,400.00
Watches and watch materials.....	228,650.89
Total.....	261,915.18

Geneva.

Chromos.....	38.05
Musical boxes.....	2,359.73
Machinery.....	161.73
Physical instruments.....	2,580.51
Watches and watch materials.....	30,485.09
Total.....	35,625.11

Horgen.

Catholic devotional articles.....	12,354.70
Cheese.....	2,120.94
Silks in the piece.....	122,100.45
Half silks in the piece.....	147,291.53
Silk ribbons.....	417.46
Miscellaneous.....	1,763.53
Total.....	286,057.63

Lucerne.

Cheese (Swiss).....	384.73
Condensed milk (Swiss).....	13,678.87
Furniture.....	1,690.68
Silk (spun).....	3,248.27
Wine and spirits.....	426.72
Wood carvings.....	243.18
Miscellaneous.....	606.02
Total.....	20,278.47

St. Gall.

Bolting cloth (silk).....	10,804.86
Church articles.....	2,016.10
Cotton:	
Embroideries.....	595,545.99
Cloth.....	20,714.30
Curtains.....	448,428.81
Handkerchiefs, dresses, aprons, ties, collars, etc.....	484,166.81
Laces.....	17,291.44
Linen goods.....	553.23
Machines and parts thereof.....	2,837.29
Postage stamps (used).....	513.52
Ribbons.....	906.56
Silk:	
Embroideries.....	16,460.79
Underwear.....	214.79
Wine.....	336.32
Wood carvings.....	224.64
Woolen yarns.....	4,226.52
Miscellaneous.....	938.45
Total.....	1,606,180.42

Vevey.

Hardware.....	\$6,794.76
Household effects.....	3,440.61
Leather.....	17,737.03
Musical boxes.....	42,373.34
Products of milk.....	21,776.19
Watches and watch materials.....	12,256.03
Wines.....	584.60
Total.....	104,962.67

Winterthur.

Beef extract.....	8,154.17
Breeding animals.....	193.00
Gelatin.....	1,041.89
Hardware and machinery.....	628.66
Knit goods.....	6,936.58
Silk and half-silk piece goods.....	5,582.38
Woolen yarns.....	2,319.64
Total.....	24,856.32

Zurich.

Books.....	149.39
Candles.....	384.05
Cheese.....	4,732.29
Cotton goods.....	12,185.47
Hardware and machinery.....	123.64
Household effects.....	1,833.50
Knit goods.....	10,211.38
Photographs.....	760.99
Silk:	
Bolting cloth.....	38,355.03
Spun.....	4,193.80
Silk and half-silk piece goods.....	647,222.06
Velvets.....	360.72
Woolen:	
Goods.....	7,673.07
Yarns.....	24,682.87
Sundries.....	110.98
Total.....	752,979.24

TAHITI.

Cocoanuts.....	1,689.60
Copra.....	19,488.37
Cotton.....	4,221.90
Desiccated cocoanuts.....	435.38
Miscellaneous.....	78.85
Pearl shells.....	4,130.58
Purau wood.....	84.50
Vanilla beans.....	4,563.20
Total.....	34,692.38

TURKEY IN ASIA.

Ateppo.

Licorice root.....	41,162.00
Various goods.....	382.00
Wool.....	205.00
Total.....	41,749.00

Bagdad.

Mohair.....	\$31,900.00
Skins.....	198.22
Wool.....	201,852.42
Total.....	233,950.64

Beirut.

Glass antiquities.....	1,367.61
Hides.....	106.51
Licorice root.....	995.94
Oriental sundries and provisions.....	2,353.48
Wool:	
Unwashed.....	14,264.58
Washed.....	8,948.78
Total.....	28,036.90

Damascus.

Oriental goods.....	1,540.05
Wool.....	26,859.95
Total.....	28,400.00

Haifa.

Castile soap.....	1,233.82
Ancient glassware.....	1,367.50
Total.....	2,601.32

Jerusalem.

Mother-of-pearl.....	1,685.62
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Smyrna.

Canary seed.....	3,694.22
Carpets and rugs.....	58,032.59
Emery stone.....	20,128.00
Figs.....	489,501.62
Goatskins.....	32,537.28
Iron ore.....	41,874.56
Licorice root.....	103,969.07
Olive oil.....	15,492.99
Olives.....	237.95
Opium.....	34,000.89
Raisins.....	100,183.87
Soap.....	4,606.32
Sponges.....	1,836.73
Tobacco.....	1,143.01
Walnut meats.....	733.43
Wool.....	109,057.64
Sundries.....	735.57
Total.....	1,017,765.74

TURKEY IN EUROPE.

Constantinople.

Attar of roses.....	44,299.93
Pure.....	3,819.72
Carpets and rugs.....	196,954.52
Cocoons (pierced).....	8,588.16
Embroideries.....	5,702.71
Gum tragacanth.....	4,435.34
Guts (sheep).....	1,485.04
Mohair.....	213,891.62
Opium.....	50,848.35

Ore (iron).....	\$25,350.35
Oriental articles and bazaar goods.....	9,751.74
Paper (cigarette).....	580.43
Roans.....	4,780.01
Rubber waste.....	370.21
Seed (canary).....	10,671.56
Silk (raw).....	669.24
Skirts (goat and kid).....	10,311.63
Sundries.....	556.72
Tobacco.....	1,278.33
Wool (sheep).....	246,691.48
Total.....	840,937.09

Salonica.

Skins.....	45,836.00
Opium.....	12,416.00
Tobacco.....	3,338.00
Wool.....	156.00
Total.....	61,746.00

UNITED KINGDOM.

Aberdeen.

Combs.....	5,586.90
Granite (polished).....	80,034.18
Herrings.....	12,993.58
Harness composition.....	281.52
Iron sand.....	486.00
Lantern slides.....	335.72
Linens.....	8,490.30
Machinery.....	1,814.40
Paper.....	10,243.46
Whisky.....	686.52
Woolen goods.....	10,832.10
Total.....	131,784.68

Athlone.

Woolens.....	9,700.33
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Ballymena.

Linens.....	30,934.79
Pottery.....	1,325.14
Unions.....	10,838.64
Total.....	43,098.57

Barnsley.

Cotton goods.....	480.12
Dead oil in drums.....	575.62
Glue.....	9,640.33
Linens.....	4,827.85
Total.....	15,523.92

Belfast.

Cottons.....	190,921.99
Felt.....	5,826.78
Flax.....	121,880.14
Ginger ale.....	32,161.84
Linens.....	1,878,946.49
Machinery.....	827.30
Seeds.....	3,126.29
Stationery.....	7,861.30
Threads.....	26,029.28

Unions.....	\$21,064.24
Whisky.....	4,320.14
Woolens.....	3,904.30
Sundries.....	2,880.35
Total.....	2,359,760.44

Birmingham.

Anvils.....	10,966.73
Bedsteads.....	37,194.17
Buttons.....	2,905.76
Chain.....	2,311.46
Chemicals.....	60,948.60
Cotton goods.....	2,486.98
Cycles and cycle materials.....	33,378.60
Earthenware.....	10,766.18
Fancy goods.....	75,747.88
Glass.....	22,380.31
Guns and gun materials.....	15,233.31
Hardware.....	60,031.92
Metal sheathing.....	7,111.12
Nickel.....	10,560.30
Pens and tips.....	30,226.20
Phosphorus.....	3,316.43
Saddlery.....	45,593.81
Shells.....	1,594.26
Skins.....	6,196.64
Steel and iron.....	21,129.14
Steel tubes.....	132,139.32
Wets.....	4,269.38
Sundries.....	1,618.20
Total.....	598,196.70

Cardiff.

Coal.....	393.55
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Carlisle.

Biscuits.....	99.47
Cotton, manufactures of.....	24,585.76
Hats (felt).....	155.54
Oatmeal.....	203.66
Stone (building).....	721.65
Spiegeleisen.....	6,965.54
Woolen goods.....	11,231.72
Total.....	43,963.34

Cork (Queenstown).

Calfskins.....	9,181.51
Church vestments.....	43.79
Down quilts.....	793.16
Hides.....	5,311.24
Irish terrier.....	14.59
Mackerel.....	10,066.95
Magnesia.....	455.28
Whisky.....	4,934.86
Total.....	20,801.00

Dublin.

Ale, beer, etc.....	201,522.73
Books.....	729.97
Carriages.....	263.52
Feathers.....	1,249.14
Glue.....	6,388.63
Hosiery.....	2,046.97
Leather.....	629.72

Miscellaneous goods.....	\$246.80
Personal effects.....	486.65
Roast maize.....	587.46
Rubber tires.....	474.09
Sausage casings.....	2,182.44
Skins.....	4,315.20
Wines and spirits.....	5,003.24
Woolens.....	1,536.41
Total.....	228,632.97

Dundee.

Bagging (jute).....	38,100.88
Bags (jute).....	1,987.15
Burlaps.....	1,161,748.15
Carpeting (jute).....	26,646.17
Cottons.....	11,445.36
Flax.....	4,329.72
Gauge glasses.....	3,855.07
Glue stock.....	549.75
Golf goods.....	1,191.99
Hair (calf).....	1,280.57
Hose, canvas (flax).....	689.54
Hosiery.....	4,067.60
Jute.....	2,388.88
Leather.....	10,844.78
Linens.....	598,131.95
Machinery.....	230.19
Matting.....	3,294.44
Mica.....	550.02
Paddings.....	60,028.50
Paper stock.....	9,372.48
Preserves.....	6,772.33
Tow.....	3,981.32
Whisky.....	2,907.08
Wool.....	21,967.75
Woolens.....	1,046.02
Yarn.....	22,461.40
Total.....	1,999,869.08

Dunfermline.

Cotton.....	25,245.66
Linoleum.....	38,854.26
Linens.....	526,893.57
Whisky.....	270.70
Yarns.....	15,271.93
Miscellaneous.....	657.44
Total.....	607,193.56

Falmouth.

China clay.....	70,073.63
China stone.....	3,345.71
Pilchards.....	590.86
Total.....	74,010.20

Galashiels.

Animals for breeding (dogs).....	136.26
Hosiery.....	652.51
Tweeds.....	17,591.88
Woolen cloth.....	46,577.47
Yarn.....	154.63
Total.....	65,112.75

Glasgow.

Beer.....	\$1,995.44
Books.....	10,061.09
Cotton goods.....	164,418.06
Carpets, carpeting, and rugs.....	34,462.75
Chemicals.....	163,273.67
Coal.....	10,745.79
Dogs.....	375.00
Fire-clay goods.....	6,940.34
Fishing gut.....	3,455.17
Flax.....	45,458.42
Furs.....	9,080.83
Gum and paints.....	8,685.83
Glass and glassware.....	475.68
Hemp and jute goods.....	11,507.04
Herrings.....	104,833.99
Hides and skins.....	36,369.20
Iron (pig).....	4,795.81
Lace curtains and nets.....	14,601.26
Laces and trimmings.....	5,112.65
Linen goods.....	3,844.31
Machinery and ironware.....	40,621.88
Muslins.....	17,395.85
Paper and paper stock.....	11,222.21
Paper hangings.....	173.42
Printed paper.....	3,073.16
Ponies.....	50.00
Provisions.....	4,897.18
Rags (old and new).....	3,822.92
Shawls.....	7,965.95
Silk goods.....	14,978.08
Steel.....	41,990.46
Stone and stoneware.....	2,236.25
Tobacco pipes (clay).....	5,727.04
Thread.....	69,316.05
Union goods (cotton and woolen).....	34,918.24
Whisky.....	14,716.95
Wines and liquors.....	1,022.14
Wire goods.....	568.58
Wool.....	66,520.89
Woolen goods.....	43,333.82
Miscellaneous.....	91,044.11
Coal tar and coal-tar pitch.....	15,893.06
Total.....	1,132,050.55

Greenock.

Sugar.....	66,700.01
Whisky and gin.....	143.75
Pickled sheepskins.....	7,467.94
Total.....	74,311.70

Hartlepool and Middlesboro.

Chemicals.....	3,241.95
Ferro manganese.....	28,576.91
Linen and union goods.....	578.58
Sand (iron).....	2,687.23
Salt.....	1,763.62
Sweeping machines.....	317.30
Total.....	37,165.59

Huddersfield.

Canvas.....	19.71
Card clothing.....	12,994.12

Chemicals and dyes.....	\$44,355.14
Corduroys and fustians.....	3,062.12
Cotton:	
Cloth.....	1,422.41
Sewing.....	28,283.44
Velvets and velveteens.....	2,270.58
Fuller's earth.....	5,686.67
Grease and oils.....	449.32
Haircloth.....	1,540.99
Hosiery.....	207.87
Linens and cotton.....	1,169.08
Linens and linen yarn.....	1,514.76
Machinery.....	789.35
Mohair and cotton.....	90,297.26
Mohair, wool, and cotton.....	340.95
Mohair, worsted, and cotton.....	430.77
Oil paintings and water-color draw- ings.....	388.34
Rugs and shawls.....	2,990.34
Silk and cotton.....	1,807.47
Silk yarn.....	12,859.61
Soap.....	37.77
Stationery.....	607.83
Stuffs.....	6,080.06
Tape.....	18.48
Tea.....	10.54
Twine.....	47.80
Wool.....	52,075.84
Wool and mohair.....	1,027.45
Woolens.....	371,257.98
Woolens and cotton.....	27,757.99
Woolens, cotton, and shoddy.....	1,963.99
Woolen rags.....	4,217.63
Woolen thread waste.....	11,798.42
Worsted.....	610,546.56
Worsted and cotton.....	1,865.32
Worsted, cotton, and shoddy.....	573.67
Worsted and silks.....	607.30
Worsted, cotton, and silks.....	610.38
Worsted and woolens.....	4,316.36
Worsted yarn.....	19,999.59
Total.....	1,328,210.16

Hull.

Chemicals.....	35.40
Cliff stone.....	7,253.56
Coal.....	896.04
Colors.....	6,109.30
Dog biscuits.....	98.70
Ebony.....	576.32
Flax.....	3,982.39
Hair (cattle).....	9,674.74
Leather.....	2,151.59
Linseed oil.....	3,547.29
Paints.....	1,643.19
Skins (calf).....	1,946.25
Tar.....	879.76
Turpentine.....	243.33
Washing blue.....	3,653.21
Wood.....	301.36
Wool.....	28,013.03
Zinc sheets.....	184.92
Total.....	71,210.38

Kidderminster.

Carpets.....	\$36,536.66
China and porcelain.....	16,142.60
Glass.....	15,828.17
Hardware.....	12,221.83
Sauce.....	8,562.44
Skins.....	22,899.90
Sundries.....	7,786.86
Total.....	119,978.46

Leeds.

Chemicals and dyestuffs.....	10,819.97
Confectionery, etc.....	2,632.76
Earthenware and bricks.....	10,228.21
Hair, wool, etc.....	78,964.96
Leather, etc.....	5,243.53
Linens, etc.....	1,583.78
Metals, machinery, etc.....	37,141.74
Skins and furs.....	18,639.42
Sundries.....	6,972.64
Waste (spun-silk yarn).....	9,805.96
Woolens.....	115,623.34
Woolens, worsteds, etc.....	383,132.75
Worsted.....	171,666.64
Total.....	852,455.70

Leith (Edinburgh.)

Beer, ale, and stout.....	2,212.69
Biscuits.....	695.74
Books, printed sheets, etc.....	20,191.61
Carpets.....	2,705.85
Chinaware.....	349.75
Clocks.....	48.66
Cork wood and corks.....	12,316.35
Electrotypes.....	302.57
Fish (cured).....	14,328.08
Furniture.....	213.15
Gelatin.....	36,157.81
Glassware.....	905.21
Golf goods.....	660.85
Labels.....	416.42
Linen and cotton goods.....	601.50
Liquid malt extract.....	2,390.74
Maps.....	2,188.08
Medicines, drugs, and chemicals.....	1,673.07
Nets.....	156.76
Oatmeal.....	151.10
Oil (vegetable).....	108.11
Paper stock.....	747.95
Perambulator.....	109.04
Personal effects, etc.....	1,722.86
Printing ink, etc.....	427.64
Provisions.....	1,484.56
Shoes.....	759.77
Show cards, etc.....	115.94
Stereotype plates.....	481.86
Vulcanite and celluloid goods.....	1,083.44
Waterproof goods.....	308.53
Wines and spirits.....	20,536.58
Wire and wire cloth.....	7,268.90
Wood pulp.....	199.04
Wool.....	29,083.72
Wool and worsted goods.....	1,853.28
Total.....	164,959.81

Limerick.

Feathers.....	\$157. 67
Hides.....	2,459. 33
Bacon.....	143. 03
Total.....	2,760. 03

Llanilly.

Castings.....	2,193. 14
Grease.....	1,867. 44
Iron ladles.....	574. 28
Machinery.....	218. 25
Palm oil.....	1,733. 78
Tin plates.....	68,867. 17
Tin.....	11,377. 09
Miscellaneous.....	16. 53
Total.....	86,847. 68

Lurgan.

Cottons.....	19,695. 26
Linen.....	104,934. 39
Threads.....	18,792. 53
Unions.....	11,614. 03
Total.....	155,036. 21

Newcastle.

Antimony.....	31,228. 33
Books.....	428. 25
Bricks.....	6,647. 64
Carbonate of barytes.....	486. 65
Cement.....	1,615. 68
Chemicals.....	21,972. 25
Coal and coke.....	11,368. 14
Composition paint.....	2,696. 04
Copper.....	54,154. 41
Ferro manganese.....	3,854. 27
Iron.....	2,238. 59
Leather.....	9,796. 26
Machinery.....	895. 44
Rope.....	3,046. 43
Skins.....	39,973. 43
Steel manufactures.....	1,299. 35
Stone (grindstones).....	8,784. 03
White lead.....	4,703. 53
Miscellaneous.....	1,518. 35
Total.....	206,707. 07

Newport.

Manganese.....	20,324. 93
Oxide.....	1,612. 06
Tin plates.....	16,654. 80
Total.....	38,591. 79

Nottingham.

Boot and shoe laces.....	2,989. 78
Braids (boniton).....	1,207. 62
China.....	5,088. 79
Colors.....	17,094. 32
Cotton.....	6,081. 68
Earthenware.....	2,873. 29
Elastic.....	51,213. 03
Gloves.....	93. 31
Grease.....	1,126. 07

Haberdashery.....	\$2,692. 27
Handkerchiefs.....	11,626. 36
Hosiery.....	364,854. 75
Jacquard cards.....	424. 67
Lace.....	424,038. 04
Leather.....	9,218. 78
Linen.....	22,856. 83
Machinery.....	41,599. 14
Muslin.....	3,090. 22
Oxide of iron.....	973. 92
Polishing powder.....	1,258. 38
Spar ornaments.....	107. 30
Salted stock.....	119,563. 08
Silk.....	39,364. 38
Wire goods.....	1,082. 52
Woolen.....	15,304. 44
Miscellaneous.....	12,335. 68
Total.....	1,158,158. 65

Portsmouth.

Household furniture and effects.....	150. 00
Pickled sheepskins.....	12,490. 00
Steel pens.....	215. 00
Yacht sails.....	125. 00
Total.....	12,980. 00

Redditch.

Needles, fishhooks, etc.....	73,729. 23
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Sheffield.

Ale (hop), bitter.....	331. 75
Anvils.....	654. 24
Combs.....	223. 90
Cotton goods.....	861. 06
Cutlery.....	199,515. 74
Doctors' composition.....	383. 22
Edge and other tools.....	1,720. 75
Electroplated and silver goods.....	1,182. 68
Ferro chrome.....	808. 51
Files.....	963. 90
Glue.....	3,633. 84
Grindstones.....	211. 45
Hair and fiber.....	574. 49
Horn pieces.....	888. 52
Horn manufactures.....	5,131. 78
Leather laces.....	7,050. 35
Machinery.....	2,194. 74
Measuring tapes.....	9,351. 70
Bead manufactures.....	8,810. 97
Pins (steel).....	323. 58
Raddle.....	385. 17
Sauce.....	255. 24
Steel:	
Wire, bars, sheets, etc.....	422,153. 79
Boiler tubes.....	435. 73
Forgings.....	331. 05
Tires.....	287. 20
Umbrella ribs.....	226. 17
Wines and spirits.....	390. 36
Sundries.....	424. 91
Total.....	669,711. 84

Southampton.

Clover seed.....	\$378.06
Grease wool.....	7,568.79
Household and personal effects.....	4,791.99
Potatoes.....	2,410.84
Ships' stores.....	1,740.18
Snakewood.....	233.46
Yacht fittings, etc.....	7,791.74
Total.....	24,915.06

Sunderland.

Bags (grain).....	169.84
Carpets.....	8,120.00
Total.....	8,289.84

Troon.

Carpets, carpeting, and rugs.....	20,970.73
Lace curtains and nets.....	19,382.55
Bonnets.....	12,569.40
Linen thread.....	8,759.25
Tapestry.....	7,243.58
Crape goods.....	3,825.32
Tweeds and worsteds.....	2,312.41
Hone stones.....	1,951.19
Fishhooks.....	697.16
Muslim.....	866.60
Woolen goods.....	677.00
Silk.....	640.73
Curling stones.....	589.62
Whisky.....	47.50
Total.....	80,533.04

Tunstall.

Chamois leather.....	301.72
China.....	55,143.53
Colors.....	2,884.76
Combs.....	534.42
Elastic web.....	387.86
Earthenware.....	1,181,406.83
Fishing tackle.....	158.14
Glass.....	2,477.05
Hardware.....	2,513.54
Ink.....	554.78
Paper.....	2,088.48
Parian.....	528.99
Potters' materials.....	4,162.54
Tiles.....	1,376.43
Toys.....	1,693.54
Total.....	1,256,212.61

Waterford.

Limestone.....	132.36
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Weymouth.

Plaster casts.....	\$502.75
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Wolverhampton.

Chemicals.....	1,368.78
Glue.....	3,569.90
Hardware.....	8,817.02
Tiles, etc.....	17,690.73
Sundries.....	1,276.21
Total.....	32,722.64

URUGUAY.

Montevideo.

Dry and salted hides.....	769,641.86
Hide cuttings and pizzles.....	5,597.21
Horns and horn piths.....	1,036.86
Horsehair.....	19,687.63
Linseed.....	9,367.11
Skins (carpincho and stags).....	2,011.20
Wool.....	413,409.50
Total.....	1,240,751.37

VENEZUELA.

Coro.

Coffee.....	66,895.04
Goatskins.....	132,209.33
Oxhides.....	2,512.91
Wool.....	180.19
Deerskins.....	52.39
Quina bark.....	116.15
Total.....	201,966.01

Maracaibo.

Coffee.....	1,829,428.85
Cacao.....	642.76
Fish sounds.....	812.83
Hides.....	9,772.46
Quina bark.....	2,985.23
Returned American goods.....	365.81
Skins.....	3,914.22
Total.....	1,847,922.16

ZANZIBAR.

Ivory.....	31,957.26
Goatskins.....	4,832.64
Lamu chair.....	20.26
Cloves.....	4,642.64
Total.....	41,092.80

HORTICULTURE AT GHENT.

Few persons not engaged in horticultural pursuits in our country would believe that plants, seeds, and bulbs were imported into the United States from Europe to the value of more than \$1,000,000 annually. The prevailing idea seems to be that we produce sufficient of these articles to supply our demand. The fact of such an import trade, however, being granted, where should we look naturally to discover the sources of our supply? To the countries of the south? Here again we give utterance to a popular error. The home of the larger part of plants destined for commerce is not in the sunny region of the Mediterranean. On the contrary, we learn from the statements of declared exports that plants destined for the United States are mostly shipped from Hamburg, London, Rotterdam, Ghent, Erfurt, and Nantes, all cities of the colder regions. Toulon is the only place in warmer European climes from which there is any considerable export to our country.

Each center of horticulture may be said to have its specialties. Erfurt and Quidlenburg are famous for seeds, Dresden and Leipsic for azaleas and camellias, Berlin for lilies of the valley, Hamburg for azaleas and palms, Paris for roses and lilacs, Orleans and Angers for shrubs and fruits, Boshoop (Holland) for its arboriculture, and Ghent for azaleas, palms, and araucarias.

As there are annually many American horticultural establishments purchasing in the Ghent market, it may be of interest to briefly review the development and condition of horticulture in this city and in the vicinity. The purpose of this report is to furnish as much information as possible which may be serviceable to the trade and interesting to the general public. Before proceeding further, however, two explanations must be made:

The relations existing between the horticulturists of the United States and of Belgium seem to be strictly limited in the latter country to this consular district. So far as I am able to learn, plants are rarely, if ever, shipped to the United States from any of the other three districts in Belgium. Statistics, therefore, given for the district of the two Flanders serve to measure the entire trade between Belgium and the United States.

The second explanation is rather in the nature of an excuse for the lack of more complete and accurate statistics in this report. Among the early subjects which suggested themselves to me upon my arrival here, horticulture was the first. For a year my endeavor has been to secure as full and reliable information as may be obtainable; but even at this date figures are scarce; such few as are copied from Belgian official sources, as will be seen later, are so much at variance with our own statistics for the same trade as to render the accuracy of the first-mentioned seriously doubtful.

HISTORICAL.

Horticulture prospers only when nations are flourishing. By this circumstance, it proves its right to be classed as an art. When Rome was in its

magnificence, numerous useful and curious foreign plants found amateurs in the imperial city. With the fall of the emperors, the cultivation of plants was neglected and forgotten; horticulture was exiled. Likewise, at the height of the power of Belgian agriculture and industry, when Bruges was the chief mart of Europe, and Antwerp was gradually monopolizing the commerce of the north, in the fourteenth and fifteenth centuries the cultivation of plants and flowers in Belgium was keeping pace with the general opulence. In the sixteenth century, Dodonæus, De l'Obel and De l'Escluse were composing their immortal works. Clusius and Van Sterbeek may here also be mentioned as among those Belgians who, at a later date, won European fame by their botanical investigations. Before 1550, the Belgians were recognized as the foremost cultivators of the world. They were gardeners *par excellence*. Botanists were numerous, and one of them writes that there were then cultivated in Belgium more varieties of plants than in Greece, Spain, Germany, England, France, and Italy combined—an assertion maintained by modern authors as a truth supported by irrefutable testimony.

Existing records of the period from 1622 to 1646 mention many private amateurs of horticulture residing at Ghent, among them William de Blasere, an alderman of the city, who possessed a collection of orange trees imported from Italy; the Bishop of Ghent of that period, also, is said to have had in his garden, the "Belvedere," all kinds of plants, including many rare species. In the seventeenth and eighteenth centuries floriculture gradually withdrew into the more northern provinces of the Netherlands. The taste for the cultivation of plants, although dormant, did not, however, entirely disappear from this region. About 1750, the style of English gardens was introduced, and, as a result, the acclimatation of a large number of vegetables followed. Under the French domination, the central departmental schools had botanical gardens; a knowledge of flowers began to enter into popular education; botany became the study *à la mode*. The modern collections of flowers were first founded under the French Empire; the capital cities commenced to establish agricultural societies. The first of these organizations in Belgium owed its creation to the citizens of Ghent; it was founded in 1808, and in 1815 became known as the Royal Society of Agriculture and Botany, which name it still bears.

Leaving further details concerning this society until a subsequent paragraph, let us briefly recount a few of the more important facts in the history of horticulture at Ghent.

In 1742, the first advertisement of a public auction of plants appeared in the Ghent Gazette; the same journal announced in 1749 that a French nurseryman was coming annually to offer for sale at Ghent well-assorted collections of fruit trees. The weekly market of plants commenced in 1772, to be held Sundays, on the Place d'Armes, the principal square of the city. At that time, however, the trade was purely local. The year 1774 marks the opening of foreign relations. Judoricus Hughens visited England and returned with many new plants. Many other persons followed his example.

Foreign horticulturists also began to visit Ghent and to make purchases at its market. At the commencement of the present century, however, Ghent horticulture was still in its infancy; the number of plants cultivated was very limited, the few greenhouses existing were poorly constructed, and the methods employed were antiquated. It was, however, about this time that the title "City of Flowers" was bestowed upon Ghent.

ESTABLISHMENT OF THE BOTANICAL GARDEN.

Baudouin de Bocla, a monk of the order of St. Peter, had established in 1197 the abbey of the Benedictines at Sinay, in the Waes country. In 1585, this abbey, known as Baudeloo, was transferred to Ghent. Suppressed in 1796, its grounds were chosen in 1797 as the site of the botanical garden, established in that year. Even at this day, it is popularly called Baudeloo Garden. Bernard Coppens was the designer, and Pisson the architect of the new garden. Under the directorship of Van Hulthem, upon the visit of Napoleon, in July, 1803, a consular decree gave the proprietorship of the botanical garden to the city of Ghent. When the University was founded in 1817, it succeeded the city to the title. At this time, when the botanical garden could boast of more than six hundred varieties of fruit trees, it ranked among the most important in Europe. In 1802, Couret-Villeneuve published at Paris his *Hortus Gandavensis*, a descriptive catalogue of all the plants found in the botanical garden of Ghent. In 1810, 1811, and 1817, Jan Hendrik Mussche published various editions of a similar catalogue.

FURTHER DEVELOPMENT.

The year 1808 was important for the industry of horticulture. It is distinguished by the first efforts at cooperation, as evinced by the establishment of the Royal Society of Agriculture and Botany, already mentioned. This society held its first exposition of plants in the garden of an inn called "Frascati" during the month of February, 1809. The number of plants exhibited was thirty. This same society, in 1893, exhibited one hundred thousand different plants. About 1809, also, many exotic plants were introduced directly from South America, and during succeeding years many private and public expeditions were sent out for the purpose of collecting curious foreign plants. The first flowers which were cultivated here with favor were primroses. Among the many circumstances which contributed to fix the cultivation of plants in the vicinity, the two facts about to be stated may be regarded as the most effective in their influences.

In the early years of the present century, the scientist Von Siebold, who was attached to the botanical garden of Ghent, was selected by the Dutch Government to go on a botanical expedition to Japan. He naturally brought back with him many horticultural curiosities. The botanical garden of Ghent obtained its share of his acquisitions. Among the treasures which he displayed were camellias, then seen for the first time in Europe,

and Japanese lilies, first brought to Europe from their native country; *Camellia Japonica*, with its double white flower, and also the red camellia, with white stripes, were previously uncultivated in Europe. The first lily of Japanese origin imported by Von Siebold was *Lilium speciosum*. The facts just mentioned have been communicated to me by a prominent botanist of Belgium, and upon his authority I am permitted to state it is the first time that they have appeared in print.

The first double camellia is elsewhere mentioned as having been seen in Ghent in 1808. It had been brought from Holland, of which country it is stated not to have been a native, but the place of its origin is not given. This one plant sold for the sum of \$200. The other important factor in the establishment of Ghent horticulture was the visit to England, about 1820, of three flower merchants of the Place d'Armes. They returned home imbued with modern ideas and vast projects of imitating their English competitors. Each of them successfully engaged in business, and, ultimately, became the proprietors of an immense establishment. They were by far the most important horticulturists of their day in this city, and their influence is still felt. Their establishments still exist.

Some persons also maintain that the climate of Ghent has proved favorable to the development of many kinds of plants. They claim that the degree of humidity always existing in the atmosphere is beneficial, that the distance from the sea is just right for certain kinds of cultivation, and that there exists here a peculiar ferruginous water which renders plants more vigorous. The composition of the soil, being the result for the most part of decomposed leaves, is alleged to be superior. In support of their propositions, they mention that certain kinds of plants are cultivated to a much higher degree of perfection here than elsewhere in Belgium without any apparent reason except that of latent differences in soil, water, and climate. On the other hand, many tell me that the soil in other localities is equally as good, and that this climate for many plants is decidedly unfavorable. For instance in southern England, the Gulf Stream exerts such an influence upon the atmosphere as to permit the cultivation of plants indigenous to the Cape of Good Hope, which it is utterly impossible to raise here. In short, they attribute the horticultural success of Ghent rather to a series of fortunate circumstances and to the indomitable energy of its votaries than to any natural advantages.

The first considerable shipment of plants to any distant country was made to Russia in 1815. The value was \$6,000.

The *Cactus Melocactus* was seen for the first time in 1816, having been brought directly from the island of St. Bartholomew. In 1817, the cactus speciosus flowered for the first time in the botanical garden. The first complete catalogue of flowers cultivated at Ghent was published by Van Geert in 1820; one of the two first specimens of the *Camellia Sansanqua rubra* introduced into Belgium came to Ghent in 1823. It had been purchased in England for \$25. At an exposition held here during the same year,

the only specimen of *Gastonia palmata* then existing on the Continent was exhibited and carried off the prize offered to the rarest plant. From 1826 forward, the arrivals of foreign plants became common and very frequent.

In 1834, the *Doryanthes excelsa* obtained a first prize; it is the only time this plant has ever bloomed in Europe, as mentioned by a good authority printed in 1870. This same author states that it would be very doubtful if this plant would ever bloom again in Europe. I have, however, been unable to secure further information concerning it.

From 1843, Ghent horticulture has been in high repute throughout Europe, and its reputation has since then been daily spreading more and more to remote regions.

Horticulture may be said to have been an important factor in the wealth of Belgium for the past thirty years. Even as long ago as in 1864, at the Exposition of Brussels 20,000 plants were exhibited, whose total value approximated \$400,000.

In recent years, the tendency has been to specialization of plants and to improvement in the methods of production of particular species for foreign markets.

HORTICULTURAL JOURNALS.

In journalism, Belgian horticulture has always been very strong. We have already noticed the earliest scientific publication of this class in the catalogue of the botanical garden of Ghent by Couret-Villeneuve. It was the forerunner of numerous other catalogues emanating from all the similar gardens of the country. Then followed the trade catalogues, or, rather, lists. It was not until 1828 that any scientific work of this order appeared in Belgium. Drapiez, a Frenchman, then commenced at Brussels the publication of his *L'Herbier de l'Amateur de Fleurs* (Herbarium of the Lover of Flowers), which was finished in 1835. It was mostly a reproduction of a work already published in Paris by Mordant de Launay. Drapiez published also several other botanical works, mostly reproduced from English authors.

Charles Morren was the first Belgian author who really produced anything original. In 1832-33, he reported in print the results of his scientific analyses of the plants brought back by Von Siebold from Japan. His *Heterotropa asaroides* and *Hoteia Japonica* appeared about that time. Charles Morren, who was then living at Ghent, established, with Louis Van Houtte, the first illustrated periodical devoted to Belgian horticulture under the title of *L'Horticulteur Belge* (The Belgian Horticulturist), which was merged with another publication in 1838. Numerous other publications of a similar character followed, of which we give simply the name, the date, place of publication, and author:

Magasin d'Horticulture (Magazine of Horticulture), 1833-34; Liege; Richard Courtois.
Journal d'Horticulture pratique (Journal of Practical Horticulture); 1844-1861; Brussels; Scheidweiler, Isabeau, Gallotte & N. Funck.

Flore des Serres et des Jardins de l'Europe* (Flora of the Hothouses and Gardens of Europe); 1845-1895; Ghent; Louis Van Houÿtte.

Annales de Gand (Annals of Ghent); 1845-1850; Ghent; Ch. Morren.

Le Jardin Flouriste (The Flower Garden); 1851-1854; Ghent; Chas. Lemaire.

Nouvelle Iconographie des Camellias (New Iconography of Camellias); 1848-1860; Ghent; Ambroise Verschaffelt.

Illustration Horticole* (Horticultural Illustration); 1854-1895; Ghent; A. Verschaffelt, Chas. Lemaire, Verschaffelt, Audré, and others. (This journal is devoted to horticulture in all its branches, particularly to the description of new plants and flowers.)

La Belgique Horticole* (Horticultural Belgium); 1851-1895; Ghent; Chas. and Ed. Morren and others.

Hortus Lindenianus, 1859, Ghent; M. J. Linden.

Pescatorea, 1860, Ghent; J. Linden.

Plantes Ornamentales (Ornamental Plants); Ghent; Al. Dalliere.

Revue de l'Horticulture Belge et Etrangère* (Review of Belgian and Foreign Horticulture), 1875-1895; Ghent; Rodigas, Pynaert, Van Hulle, and Burvenich.

Bulletin d'Arboriculture, de Floriculture et de Culture Potagère* (Bulletin of Arboriculture, Floriculture, and Kitchen Garden Culture); 1864-1895; Ghent; Rodigas, Pynaert, Van Hulle, and Burvenich. (Published monthly in French and Dutch, devoted to the description of curious fruits grown in the garden of the horticultural school at Ghent.)

Lindenia Iconographie des Orchidées* (Lindenian Iconography of Orchids); 1885-1895; Ghent; Linden and Rodigas. (Published in French and English, engravings by De Panne-macker; as its name indicates, devoted to orchids.)

In 1887, an estimate was made that, until that date, the sum expended in Belgium for horticultural publications amounted to \$300,000. Since that time it has been vastly increased. In addition to the works mentioned, which treat more or less of ornamental horticulture, there have also appeared numerous theoretical and practical treatises, as well as the various bulletins and reports of societies and expositions. An enumeration is scarcely necessary.

HORTICULTURAL SOCIETIES.

Numerous societies of amateurs exist throughout Belgium for the promotion of the interests of horticulture. The most important organization of this kind at Ghent is the Royal Society of Agriculture and Botany, already mentioned. It was founded in the latter part of 1808, and opened its first exposition in February, 1809, with thirty plants. The little inn garden of that day has been replaced by a building of large dimensions, constructed in 1835, and subsequently enlarged. This casino, the present home of the society at the exposition of 1893, contained one hundred thousand plants, coming from all parts of the world. These great international exhibitions are held every five years. Their cost approximates \$20,000. The Government, however, contributes generously in their favor—Belgium gives \$6,000, the Province of East Flanders \$1,200, and the city of Ghent \$1,600. The society pays the balance of expenses. Every year two ordinary expositions are held, at which many beautiful plants are displayed. The membership of the society is about 2,000 persons. The annual dues are \$4.

*Still continue to appear and are fine publications.

It may be of interest to note that there are in Belgium twenty-five important and fifteen smaller societies of horticulture and botany. The total membership approximates 12,000. Their annual fees amount to \$20,000, expended annually to promote this science. There are a dozen great floral expositions annually held in Belgium, and prizes amounting to \$5,000 are yearly distributed. Finally, all these various societies are united in a national organization known as the *Fédération des Sociétés d'Horticulture de Belgique*. This organization holds annual conventions and publishes a series of "bulletins" in the nature of reports of its proceedings.

The first international congress of horticultural botany occurred at the Brussels Exposition of 1864. In 1868, the meeting place was Ghent. These congresses are held regularly.

Next to the Royal Society of Horticulture in importance, and occupying, indeed, first rank at Ghent, from a commercial standpoint, is the *Chamber Syndicale des Horticulteurs Belges*. This organization was established in 1880 for the purpose of protecting Belgian horticulturists against the effects of the celebrated "Berne phylloxera convention," which threatened to close the frontiers of all the world against the products of their industry. After the successful issue of this struggle, the members decided to maintain their organization and to utilize their common efforts for the improvement of their business relations with foreign nations. One of the chief objects kept in view has been to secure the abolition of all protective duties and other restrictions at home and abroad, or, when failing in these efforts, to offset the injury to their trade in some other manner. A recent example may suffice. Upon the passage of the present United States tariff law assessing a duty of 10 per cent upon certain plants, the syndicate annulled its efforts by securing a corresponding reduction in freight rates from the principal line of steamers by which this merchandise is shipped.

In order to stimulate the cultivation of plants, the society also holds monthly meetings, to which anyone may send specimens for examination by a duly appointed committee. Certificates of merit and for superior culture are awarded. Many new plants have first been brought to public attention in this manner. It should be noted that since 1884, the time of the inauguration of these meetings, orchids have won the most certificates, the *Anthurium*, *Azalea*, *Begonia*, *Clivia*, *Coleus*, *Fougères*, and *Vriesea* following in the order mentioned. The syndicate also maintains a business office, where information concerning the financial standing of any horticulturist at home or abroad may be procured.

Other societies at Ghent which should be mentioned are *La Société Van Houtte*, *L'Avenir Horticole*, *Cercle d'Arboriculture de Belgique*, for the study of pomology, and the *Société d'Agriculture de la Flandre Orientale*, which, however, is more particularly devoted to agriculture.

Before closing this part of the subject, the horticultural societies at Bruges (founded in 1761), St. Nicolas, (1827), Courtrai, (1827), and Alost, (1827), should be mentioned.

Private collections of plants and flowers at Ghent are very numerous, and their value, if it could be approximately estimated, would be a considerable sum.

HORTICULTURAL EDUCATION.

The Government has for a long time contributed generously to the support of agricultural and horticultural science, which has become a national study. There are two Government schools of agriculture—one at Gembloux, the other at Huy. Two schools of horticulture likewise are under State management; one of them is at Ghent, the other at Vilvorde. In addition to these establishments, there are twenty-four agricultural schools under private management, but subsidized by the National Government. They receive annual donations upon the condition of teaching the course of studies prescribed by the State and granting diplomas only after an examination under supervision of the authorities. These schools are situated at La Louviere, Leuze, Dinant, Virton, Carlsbourg, Grammont, Avelghem, Deynze, Sotteghem, Waremmé, Hasselt, Eecloo, Thielt, Ellezelles, Tessenderloo, Ninove, Beauraing, Zelzacte, Alost, Gyseghem, Lennick-St. Quentin, Termonde, Iseghem, Visé. Instruction in agriculture is also afforded to girls and young women of the peasant classes at the female institutes located at La Hulpe, Gyseghem, Virton, Isque, Heule, Herve, and Brugelette. The Government supplies the necessary apparatus and appliances in these institutions.

Instruction on the principles of agriculture is also given in all the more important garrisons, so that after his period of service the peasant youth may return home with a knowledge sufficient to enable him to intelligently till the fields.

During the year 1893, the official figures for the sums appropriated by the Belgian Government to agricultural and horticultural instruction were:

Staff of the institute and horticultural schools.....	\$28,757
Apparatus.....	12,352
Prizes.....	1,930
Lectures, ordinary school instruction, schools for adults.....	39,565
Total.....	82,604

The same amount was appropriated in 1894, and it will be slightly increased in 1895.

THE GHENT HORTICULTURAL SCHOOL.

The school of horticulture at Ghent was founded in 1849. Its teaching corps consists of a director and six professors. The director (Rodigas) and three of the professors (Pynaert, Van Hulle, and Burvenich) have been associated with each other in this institution for more than thirty-five years. These four gentlemen are also united in the publication of almost all the horticultural periodicals of Belgium. They are popularly known as the

"four-leaved clover." The students at present on the rolls number fifty-seven. Several of the graduates are in the United States. The course of instruction is entirely free to Belgians; foreigners must pay a fee of \$28.95 per annum. The school is required by the State to combine theoretical and practical work; the tone of its instruction is highly scientific. It aims to graduate learned horticulturists, and is particularly devoted to the cultivation of ornamental flowers and plants. The institution at Vilvorde, on the contrary, pays especial attention to the kitchen garden and endeavors to educate practical workmen. The Ghent school makes a specialty of the cultivation of hybrids and of work in the laboratory. The chief plants cultivated and studied are palms, ferns, azaleas, and camellias. Arboriculture is taught to perfection.

The course of instruction covers a period of three years. The examinations for admission take place during the first week in October. The candidate must be 16 years of age. The subjects of examination are an exercise in writing and orthography, a simple composition, arithmetic (including the metric system), explanation of a printed extract, general geography, and national history. The studies of each year are divided into five groups, as follows:

FIRST YEAR.

(1) French, Flemish, and English; syntax; style; applied arithmetic; plane geometry; drawing of plants; copying of models; physical geography.

(2) Agricultural and horticultural botany; anatomy; organography; physiology, generalities of physics; forces; properties of bodies; heat; hygrometry; chemical properties and laws; nomenclature; chemical composition of plants; geology of Belgium.

(3) Study of the bodies which are found in agriculture, agronomy, soils (clay, sand, chalk, humus), origin of arable soils; working the soil, improvements, crops; general notions of horticulture and agriculture, soil, and fertilizers; processes of multiplication, selection, employment of agricultural and horticultural implements; applications; special branches of cultivation; fruit arboriculture, fruit trees and fruit shrubbery; forest trees, nomenclatures, nurseries, road trees; the kitchen garden, its operation, kitchen-garden plants, species, races and varieties, general cultivation.

(4) Anatomy and physiology of domestic animals; the skeleton, muscles, nerves, respiratory apparatus, circulation, nutrition.

(5) Architecture of gardens and greenhouses, copying of plans, rural engineering, models in construction; practical exercises in the laboratory in chemical manipulation and in herborization; work in the kitchen gardens and in fruit and pleasure gardens; employment of tools; work in the carpentry and blacksmiths' shops.

SECOND YEAR.

(1) Flemish, French, and German; style, composition, diction; surveying and leveling; algebra; drawing of leaves, flowers, fruits; instruments and machinery.

(2) General and special botany; botanical geography; continuation of physics; meteorology; continuation of chemistry; zoology; classification; description; useful or injurious animals; mineralogy; arable stratum; agricultural regions in Belgium.

(3) Agricultural chemistry; fertilizers; laws of restoration of the soil; laws of the succession of crops; nutrition, applications, experiments; horticulture and agriculture; artificial processes of multiplication; special methods of cultivation; woody plants in open air and in cold or temperate greenhouses; coverings; agricultural plants, cereals, and fodder plants;

nomenclature of plants; cultivation and trimming of fruit trees; the fruit garden; forest and ornamental trees; pomology; kitchen gardening, natural cultivation of kitchen garden plants, early vegetables; the citizens' kitchen garden; mixed garden of the farm; seed carriers.

(4) Anatomy and physiology of domestic animals, zootomy and hygiene; feed of farm animals.

(5) Architecture of gardens and greenhouses; designing of models; landscape and symmetrical gardens, public parks, city gardens; construction of hothouses; rural engineering; specialties, buildings, barns, stables, dairies, wells; practice in gardening in all parts of the establishment and in the laboratory; excursions; practice in cultivation on a large scale.

THIRD YEAR.

(1) Exercises in composition; lectures; designing of plants, flowers, machinery, and tools; coloring; surveying; rise and tracing of plants; leveling.

(2) Botany; classification; herborization; nomenclature; practical chemistry; reagents; analyses of earths, waters, and fertilizers.

(3) Agronomic excursions; horticulture and agriculture; hothouse plants, market plants; floral compositions, their arrangement, shipping, and packing; industrial farming, experiments, arboriculture; cultivation of fruit trees under glass; planting and lopping of forest and road trees; hedges; osier grounds, copses, forests, orchards; harvests; preservation and employment of fruits; packing; pomology; kitchen gardening; intensive and extensive cultivation of vegetables; forcing houses; bleaching; vegetable trade; preservation of seeds.

(4) Zootomy and hygiene; races; habitations; food, general principles; food of each race; rations; the dairy farm, milk, butter, cheese; apiculture and pisciculture.

(5) Horticultural and agricultural accounts; bookkeeping; commerce and legislation; contracts, leases, transactions; rural code; architecture of gardens and hothouses; construction of hothouses and shelters, covered sheds, and various buildings; pavilions, drawings, projects, and specifications; laying out on the ground; heating apparatus; ornamentation; waterworks; rural economy, land, capital, labor, insurance, agricultural and horticultural industries, brewing, distilling, sugar making; chemical fertilizers; practical exercises in all branches of cultivation; arboretum; the kitchen garden; the fruit garden; forcing houses; trade; shipping and packing.

Instruction in carpentry, especially in the construction of greenhouses, is also given by an expert in a practical workshop.

It should be noted that all the lectures at the school are given in the morning, and that during the afternoon the students are divided into three sections. Each of these sections is occupied one week at a time in a horticultural establishment, in a nursery, and in the botanical garden, rotating throughout the year between these three places. A thoroughly practical instruction is thus imparted.

Examinations for advancement from one class to another are held every August before a jury appointed by the Government. No student is promoted unless he obtains a general grade of 50 per cent, and at least 40 per cent upon each subject of the examination. The final examination for the diploma resembles the others, only it is more severe. The diploma is given in the name of the Minister of Agriculture, Industry, and Public Works. The number of points obtained in the examination is indicated upon the diploma.

In addition to the regular course of instruction, there are several annual series of lectures which are open to the public. For example, for thirty-five years there have been given annually twelve to fifteen lectures upon fruit-

tree arboriculture. These are delivered Sundays in Flemish, especially for gardeners, and every Thursday they are repeated in French for the general public. I am informed that about three hundred and fifty gardeners are in attendance this winter. For three years a course of lectures upon kitchen gardening has also been given.

Notice should here be made also of the herbaria and horticultural libraries existing at the Casino, the university, and the school of horticulture. The last-named institution has about 8,000 books devoted to horticulture.

THE BUSINESS OF HORTICULTURE.

Having reviewed the learned phases of horticulture, some space must now be devoted to its commercial relations, which have, in recent years, contributed so greatly to the prosperity of this city.

The number of horticultural establishments at Ghent and in its suburbs is 366. There are 2,535 hothouses, with 3,625,500 square feet of glass roofing. The total space occupied by cultivation amounts to 1,521 acres. There are some twenty very large establishments. They have 70 to 72 hothouses each. Concerning the capital invested, accurate statistics do not exist. The estimates which I have received vary from \$4,000,000 to \$15,000,000. The difference may be explained by a variation in the extent of territory comprised in these respective figures.

THE EXPORT TRADE.

The books of this consulate show that, during 1894, thirty-nine horticulturists made shipments to the United States. Considering that it may be useful to our countrymen to know the names of those engaged in foreign trade, a list of these firms is here given in alphabetical order:

Apers, J., Loochristy (near Ghent), Belgium.
Baumann, J. Chaussée d'Anvers, Ghent, Belgium.
Blauw, J. & Co., Boskoop, Holland.
Cornelis, A., Meirelbeke, Belgium.
Dalliere, A., Ledeberg (near Ghent), Belgium.
De Cock, J., Chaussée d'Hundelghem, Ledeberg (near Ghent), Belgium.
DeCoster, J., Melle (near Ghent), Belgium.
Delaruye-Cardon, J., Chaussée de Bruxelles, Ghent, Belgium.
Delaruye, Theo., Ledeberg, Belgium.
DeMeyer, L., Chaussée d'Anvers, Mt. St. Amand, Ghent, Belgium.
DePuyssleir & Sonnevile, Loochristy (near Ghent), Belgium.
Deschryver, P., Boulevard Lousberg, Ghent, Belgium.
DeSmet frères, Chaussée de Bruxelles, Ghent, Belgium.
De Vos, L., Meirelbeke (near Ghent), Belgium.
D'Haene, A. Vve., Chaussée de Bruxelles, Ghent, Belgium.
Flora Association (The), Boskoop, Holland.
Fretin, G., Meirelbeke (near Ghent), Belgium.
Haerens frères, Somergem (near Ghent), Belgium.
Horticole Brugeoise Société, Bruges, Belgium.

Horticolé Gantoise Société, Ghent, Belgium.
 Horticultural Company (The), Boskoop, Holland.
 Maenhout, B., Chaussée de Termonde, Mt. St. Amand, Ghent, Belgium.
 Maes, J., Place Lievin Bauwens, Ghent, Belgium.
 Millet, Richard H., Ledeborg (near Ghent), Belgium.
 Petrick, C., Mt. St. Amand, Ghent, Belgium.
 Pynaert, van Geert, Chaussée de Bruxelles, Ghent, Belgium.
 Rigouts, A., Meirelbeke (near Ghent), Belgium.
 Spae, B., Coupure, Ghent, Belgium.
 Story, E., Ghent, Belgium.
 Thienpont, A., Meirelbeke (near Ghent), Belgium.
 Toeffaert, A., Ghentbrugge (near Ghent), Belgium.
 Van Coppenolle, Meirelbeke (near Ghent), Belgium.
 Van Driessche, L., Ghent, Belgium.
 Van Geert, Aug., Chaussée d'Anvers, Ghent, Belgium.
 Van Houtte, Louis, Société Anonyme, Ghentbrugge (near Ghent), Belgium.
 Vervaene, L. & fils, Meirelbeke (near Ghent), Belgium.
 Vervaet, E., Zwynaerde (near Ghent), Belgium.
 Vervaet, Isidore, Ghent, Belgium.
 Vuylstehe, Charles, Loochristy (near Ghent), Belgium.

TOWNS FROM WHICH PLANTS ARE EXPORTED.

Plants are shipped from Ghent, Ledeborg, Ghentbrugge, Mt. St. Amand, Bruges, Meirelbeke, Loochristy, Melle, Zwynaerde, and Somergem, all situated in this consular district. Their destination is widely distributed among the various ports of entry of the United States. The invoices signed by horticulturists represent more than 20 per cent of all certified at this consulate. Most of the shipments are made in the months of April, May, September, and October.

The development of the United States trade may be quickly seen from the following table:

Exports of plants from Ghent.

Year.	Amount.	Year.	Amount.
1885.....	\$4,443.59	1890.....	\$41,000.72
1886.....	5,411.67	1891.....	55,239.14
1887.....	12,284.35	1892.....	72,494.81
1888.....	16,809.70	1893.....	90,522.85
1889.....	20,712.84	1894.....	95,673.46

The general statement of commerce with foreign countries gives the Belgian export trade in horticultural products for 1889-1893 as in the next table. These statistics manifest an astounding variation as regards the United States when compared with the preceding table, taken from the official records of this consulate and known to be absolutely correct. For instance, in 1893, plants shipped to the United States from Ghent were declared at a value of \$90,522.85, while the Belgian authorities give the figures for all Belgium at \$21,673.90. No explanation sufficing to account

for this evident undervaluation can be given. It is feared that a similar discrepancy exists in all the figures of the following table, and that to arrive at a just estimate of the value of plants exported from Belgium the figures hereunder given should be increased at least fourfold. These suggestions being made, the table may be taken with due allowances.

Value of exports from Belgium of living plants and natural flowers.

Destination.	1889.	1890.	1891.	1892.	1893.
France.....	\$186,887.50	\$141,868.12	\$206,070.93	\$207,596.01	\$216,438.69
Germany.....	118,656.98	151,505.97	127,066.76	120,211.21	124,520.13
Great Britain.....	709,325.76	181,808.90	153,819.65	118,446.03	144,999.55
Holland.....	40,818.73	34,440.89	62,049.50	45,341.50	33,565.02
Luxemburg.....	2,867.59	2,180.90	3,497.93	5,830.89	6,852.27
Switzerland.....	5,512.85	7,463.50	9,718.52	7,294.82	8,085.93
United States.....	6,376.72	28,880.52	18,288.68	13,789.85	21,673.90
Other countries.....	32,907.46	18,095.39	26,220.01	20,394.33	26,159.06
Total.....	1,103,353.59	576,244.19	606,731.98	538,904.64	582,294.55

CLASSIFICATION OF PLANTS.

In the preparation of this report, efforts were made to determine which plants are shipped to the United States in the largest quantities. In general, it may be stated that the azaleas, camellias, palms, and orchids are the plants most cultivated at Ghent. No definite idea, however, prevails concerning the nature of our trade. With this object in view, I have examined all the invoices of plants shipped from Ghent during 1894 and classified their contents both as to value and quantities. The following tables give the results—a fair index of the nature of plants purchased here for American use:

Classification.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total for 1894.
Azaleas.....	\$330.51	\$11.58	\$24,863.74	\$14,555.39	\$39,761.22
Palms.....	1,362.68	10,986.65	6,903.42	4,988.70	24,241.45
Araucarias.....	2,405.26	2,384.99	3,984.59	2,591.31	11,366.15
Bulbs (Gloxinia, Begonia, etc.).....	986.71	78.85	26.05	3,361.98	4,453.59
Hothouse plants.....	484.43	1,193.13	2,209.59	526.09	4,413.24
Laurus nobilis.....	19.30	1,455.05	621.60	338.93	2,434.88
Greenhouse plants.....	90.23	118.21	634.13	466.09	1,308.66
Hardy shrubs.....	.....	.....	12.06	899.07	911.13
Camellias.....	535.58	.....	74.30	21.36	631.24
Rhododendrons.....	.....	13.51	141.60	243.55	398.66
Miscellaneous.....	41.86	.....	78.24	299.62	419.72
Total.....	6,256.56	16,241.97	39,549.32	28,299.09	90,339.94
Cost of packing.....	261.32	782.19	2,491.79	1,798.22	5,333.52
Grand total.....	6,517.88	17,024.16	42,041.11	30,097.31	95,673.46

From the preceding statistics, it will be observed that we buy in this market mostly azaleas, palms, araucarias, and bulbs. Hothouse plants means all plants requiring artificial heat for their cultivation, while green-

house plants include those which only require to be kept under cover. We also learn that the season for the shipment of azaleas is during the autumn months, while palms are sent mostly in the spring. Araucarias go throughout the entire year. The number of individual plants shipped is as follows:

Classification.	First quarter.	Second quarter.	Third quarter.	Fourth quarter.	Total for 1894.
Bulbs (Gloxinia and Begonia).....	60,500	1,837	1,500	155,448	219,285
Azaleas.....	800	50	72,538	49,564	122,952
Palms.....	2,060	15,954	11,911	7,436	37,361
Hothouse plants.....	3,110	9,524	9,101	1,175	22,910
Araucarias.....	2,650	2,735	4,364	3,806	13,555
Hardy shrubs.....			50	2,816	2,866
Greenhouse plants.....	325	191	1,146	1,191	2,853
Camellias.....	1,500		530	353	2,383
Rhododendrons.....		36	386	702	1,124
Laurus Nobilis.....	100	258	194	153	705
Miscellaneous.....	25		804	3,341	4,170
Total.....	71,070	30,585	102,524	225,985	430,164

If anyone is sufficiently interested, by comparing the number of plants with the total values given in the preceding tables, he may deduce the average values of each kind of plants. These statistics would not be of much value, as plants are sent in all stages of development. On the one hand, there are bulbs of various kinds; on the other, palm trees 8 to 10 feet high.

The preceding classification of plants is made after consultation with a leading horticulturist of Ghent. The scientific names of the various species and varieties shipped during 1894, and included above, are:

Stove plants.—*Dracaena* (*indivisa*, *Lividia*, *gracilis*, *Massangeana*, *Baptista*, *conjecta*, *amabilis*, *lineata*), *Aspedistra*, *Ficus elasticus*, *Pandanus*, *Aralia* (*Sieboldi-chabrieri*), *Croton* *Epi-phyllum*, *Anthurium* (*Rothschildianum-Scherzerianum*), *Clivias* *Mimata*, *Pandanus* *Veitchi*, *Cycas* (*Circinatis*, *Involuta*), *Gardenia* *Olschynanthus* *Humboldt*, *Neo Caledonia*, *Asparagus* (*lamorensis-plumosus*), *Philodendrons*, *Inufabicus* *Auricomia*, *Aristolochia*, *Saxipaga* *Sarmentosa*, *Phynium*, *Cylissus* (*Racemosus*), *Stephanosis* *floribunda*.

Palms.—*Areca* (*Lapida*, *Lutescens*, *Baueri*, *Verschaffelti*), *Corypha* (*Australis*), *Palmiers*, *Phoenix* (*Canariensis-reclinata*) *Cocos* (*flexuosa-flexiana*), *Wedliana*, *Chamserops* (*excelsa*, *humilis*, *fortunscæi*), *Livistona* (*rotundifolia*, *Altissima*, *Hoogendorpe*), *Seaforthia* *Elegans*, *Geonoma* (*Scottiana*, *Seemani*, *Intermedia*, *Imperialis*), *Raphis* *flabelliformis*, *Latania* (*borbonica*), *Palms*, *Kentia*, (*Forsteriana*, *Baltimoreana*, *McArthuri*, *Canterburiani*), *Chamædaria*, *Cero-cyla* (*Niveum*), *Raphis*, *Thrinæa* *Elegans*.

Greenhouse plants.—*Citrus* (*Aurantiaca*), *Acacia* (*Paradoxa-longifolia*), *Metrosideros* (*floribunda*, *superflora*), *Eurya* *Latifolia* *Agapanthus* (*Umbellatus*), *Abutilon* (*de St. Bavon*), *Phorimum* (*Veitchi*, *Colinsa*), *Choisya*, *Memosia*, *Ophisopogon*, *Polygala*, *Hybicus* (*racinosus*), *Strimmia* *Japonica*, *Lawrustinus*, *Akehia*, *Eurya*, *Ericas*, *Genista* *Andreana*, *Daphne* *indica*, *Eronimus*.

Hardy shrubs.—*Ancuba* *Japonica*, *Clematis* (*Tackmania*), *Andromeda* *Japonica*, *Tibur-num*, *Kalmia* (*Latifolia*), *Staphilea* (*Colchicic*), *Hydrangea* (*Janicalatia*, *hortensis*), *Mag-nolias*, *Buxus* *Pyramids*, *Deutsia* (*Gracilis*), *Prunus* of all sorts.

Hardy herbaceous plants.—*Fraisiens*, *Spiria* *Japonica*, *Violettes* *Carmes* *de Toulouse*, *Pa-conias*.

Bromelia.—*Bilbergia*, *Rhodocyana*.

Ferns.—*Nephrolipsis* (*exaltata*, *cordata*), *Gymnogramma* (*Gloriola*), *Asplenium*, *Cystodium* (*falcatum*), *alsophylla* (*australis*).

Roses.—*Rosas*.

Laurus Nobilis (*bay trees*).—*Laurus*, Pyramid Bayes, standard bay trees.

Bulbs.—*Gloxinia*, *Begonia* (*tubereus*), *Amarellys* (*Hybridæ*).

Orchids.—*Cypripedium barbata*.

Araucarias (*excelsa*, *glauca*.)

Rhododendrons.—*Rhododendrons*.

Camellias.—*Camellias*.

Azalea.—*Azalea* (*Indica*, Mme. Vander Cruyssen, Empereur du Brésil, Simon Mardner Professor Walter, Dr. Moore, Empress of India, Bernard Andreas-Alba.)

CREDITS.

The question of credits has of recent years become very important to horticulturists. The tendency is continually to longer terms of payment. Indeed, the smaller houses are being ruined by this kind of competition, as their larger competitors are better able to await payment for their merchandise. The English and German houses, especially the latter, are inclined to grant longer credits than the Belgian firms, and are thus securing the advantage. Horticulturists inform me that the usual credits here given are, to England, France, and Germany, ninety days; Italy and Spain, although the risk is greater, demand longer credits, which are not always accorded; for Austria, the period is generally three months; for Hungary, much longer, subject to special agreement; for Turkey and Russia, one year; for the United States and Canada, six months; for Australia, six months after the delivery of the merchandise.

PACKING.

In packing smaller plants, wooden boxes of three-fourth inch boards are employed. They generally measure 3 feet high by 3 feet wide and are of the requisite length. All plants are packed in moss, as free from earth as possible. On each of the four sides of the box a round air hole is made, which is covered by a small piece of wire netting. Plants thus packed will keep well for three weeks. Palm trees and other large plants are covered with crates and bagging. From the foregoing table, it may be observed that upon last year's exports, valued at \$90,339.94, the cost of packing was \$5.52, being nearly 6 per cent of the cost of the plants.

FREIGHT RATES.

Freights vary from time to time, and there are several different lines of transport via Antwerp, Rotterdam, London, Hull, and Liverpool. The Red Star Line, however, has a contract with the Syndical Chamber of Belgian Horticulturists for reduced rates to its members. Formerly, the tariff for New York and Philadelphia was 37 francs (\$7.14) per 40 cubic feet. By the new agreement, however, the rate (all costs included) has been reduced to 25 francs (\$4.83) for the same space. Laurels are carried at the rate of 15 francs (\$2.90) per 40 cubic feet. For Boston, the rate is for all plants, ex-

cept laurels, 32 francs (\$6.17) per 40 cubic feet; laurels, 22 francs (\$4.24). This agreement further assures the shipment of plants by first steamer in preference to any other merchandise.

ACKNOWLEDGMENTS.

For the generous and ready assistance extended me in the preparation of this report, I avail myself of the opportunity to publicly thank Messrs. E. Rodigas, director of the Government school of horticulture and agriculture at Ghent; H. Van Hulle, professor in the same institution; C. Petrick, horticulturist; Chas. Pynaert, horticulturist, and the Syndical Chamber of Belgian Horticulturists.

The following mentioned books have also been consulted: *L'Horticulture Belge* (Belgian Horticulture); *Sketch of Ghent Horticulture*, J. Van Geert, 1870; *Bulletin de la Fédération des Sociétés d'Horticulture de Belgique*, 1883-1885; various publications of *La Chambre Syndicale des Horticulteurs Belges*; general statement of commerce in Belgium with foreign countries; *Règlement de l'Ecole d'Horticulture*.

CONCLUSION.

The cultivation of flowers at Ghent for local markets is relatively limited. Belgian horticulture lives chiefly by reason of its international relations. Fifty years ago, this foreign trade was insignificant; now it has grown to such proportions as to stretch out its arms across the ocean. Nineteen-twentieths of the products of its cultivation are destined for abroad. Other nations may, therefore, look upon the experience of Ghent as a guide for them in their efforts to develop the study and knowledge of flowers and plants, often as useful as they are beautiful.

HENRY C. MORRIS,

Consul.

GHENT, *February 6, 1895.*

AMERICAN COAL FOR BELGIUM.

The *Industrial Review*, of Charleroi, recently published an article of which the following is a translation:

We have upon several occasions, says the central committee of the miners of France, in its bulletin of May 27 last, mentioned the anxiety manifested in England concerning the progress of American competition. American and English technical journals are eagerly discussing the chances which United States miners have of displacing English coal in foreign markets, and even of entering great Britain.

At first glance, the *Iron and Coal Traders' Review* declares this conquest seems impossible. The best port for the exportation of American coal is New York. Now, New York is at a considerable distance from the coal basins. The ports of Pennsylvania, although much nearer, are not in as favorable a position for exporters, and some are still very far from the mines. There remain the ports of the south, fed by the southern coal fields. The general

impression until now has been that the coals of Alabama and of western Virginia were so far from seaports that it would be idle to assume for them any more than a local consumption.

The most bold-spirited Americans have never heretofore imagined that coal extracted at 150 to 200 miles from the sea could be transported to England—that is to say, 300 marine miles from American ports—and successfully compete with coals produced a few miles from the ports of New Castle, Hull, and Cardiff. Such is, however, the latest claim of American producers; it is worth while to consider the basis of this claim and the present condition of the coal industry in the United States.

The United States possesses the cheapest coal in the world. The census of 1890 established that the average price of bituminous coal throughout the United States in 1889 was 99 cents per ton. The average price of English coal during recent years has been 72 cents higher. It is indisputable that the margin is large. Moreover, some of the individual states are in a still more favorable situation. The average price in Maryland, for instance, was only 89 cents, while the production of bituminous coal in Pennsylvania was estimated at 46,500,000 tons, valued at \$36,000,000, or 77½ cents per ton. The value of coal in West Virginia is still less. It is probably with the coals of this last mentioned State that the English will have to compete if American coal really succeeds in entering England. During the last two years, coal has been loaded at the mine in Pennsylvania and West Virginia at 60 to 70 cents per ton. The latest official reports upon the coal production of the State of Illinois indicate an average value at the mine of less than \$1. It is notorious also that in the Connellsville district—the most important in the world for the production of coke—coke has been sold for many years at an average of 90 cents per ton.

During the past fifteen years, the price of Connellsville coke has dropped from \$2.50 to 85 cents per ton, while in England the price has not decreased more than 15 per cent. In spite of these prices, the number of coke ovens in this district has increased two and a half fold, while the production of coke, which is now 5,500,000 tons, has doubled. The maximum of 6,300,000 tons was reached in 1892. The daily wages have just been reduced 50 cents, and the miners are only paid \$1.25 per day. But all this coal, sold at such low prices, is extracted from mines distant from seaports. If the coke district of Connellsville were as close to maritime transportation as Rhondda Valley, in South Wales, South Durham coke could not, without a notable reduction in price, compete with American coke, which would inundate the metallurgic districts of Cleveland, Cumberland, and Wales. But, happily for English mine owners, distance preserves them, at least for the moment, from this competition. The Connellsville district is about 450 miles from the nearest port; the Illinois coal district is at least 750 miles from maritime transportation; Virginia coal must travel by railway a distance of nearly 400 miles to the sea. Such distances in Europe would be absolutely prohibitive. But are we sure that what would stop coal in Europe will stop it in America?

It must not be forgotten that American railway tariffs are the lowest in the world. Clear-field coal, for example, has been delivered free on board at Philadelphia for several weeks past at \$1.75 per ton—that is to say, at a price less than the price of English coal at the mine for many years, and if we compare this price with the price of coal delivered free on board in English ports as appears from the reports of the board of trade—that is, at a price of \$2.60 to \$3 per ton—the margin of 85 cents to \$1.25 per ton in favor of the United States readily explains the danger which English producers run from American competition in their own market. We speak here only of price, without considering quality. Besides, it is possible that American coal regularly shipped from the United States to Europe could obtain a freight rate of 62 cents per ton. This figure represents the freight already paid for thousands of tons, and it must be remembered that Americans will willingly carry mine loads at this price and still cheaper as ballast for ships transporting cotton and wool. What is true for Philadelphia is true *mutatis mutandis* for other American ports. Virginia coal has recently been offered free on board at Newport News and Norfolk at \$2 per ton, or 50 to 75 cents cheaper than the average export price of English coal during several years. Equally low prices are also to be noted for Alabama coal free on board at Pensacola and Mobile.

Is such a condition of affairs destined to continue long? It would be daring to answer. We, however, must observe that it is difficult to conceive what profit American mine owners can earn from their coal if they sell it at 60 cents per ton, while the wages of miners in America are 50 to 60 cents. It might likewise be asked how railway companies succeed in transporting coal at a tariff of one-half cent per mile. But Americans are at present endeavoring to reduce wages in general, and their competition will still continue, for some time at least, to assume disquieting proportions.

The foregoing article was brought to my attention by a prominent coal dealer of this city, who has become interested in the possibility of introducing American coal into Belgium. He has asked me to write upon this subject with the view of attracting the attention of American dealers to this market. The situation of American coal in Belgium would be more or less analogous to its status in England, with perhaps a slightly increased advantage. At first sight, it does seem preposterous to consider the feasibility of bringing our coal into a country which itself produces 19,410,000 tons per year; but let us examine a few figures. These 19,410,000 tons cost a total of \$35,011,358, or \$1.80 per ton. The average price of American bituminous coal is 99 cents, hence there is a margin of 81 cents for freight and other expenses. Only recently indeed, has Belgian coal been mined at this price, as is evident from the following table:

Year.	Production.			Total ex- penses.	Profit per ton.
	Quantity.	Value.			
		Total.	Per ton.		
	<i>Tons.</i>				
1890.....	20,365,960	\$51,821,079	\$2.54	\$40,480,399	\$0.56
1891.....	19,675,644	47,758,622	2.42	40,837,449	.35
1892.....	19,583,173	38,848,584	1.98	36,578,518	.12
1893.....	19,410,519	35,011,358	1.80	33,777,123	.07

The profits, it will be observed, have steadily decreased until now they seem to have reached a minimum, below which they can scarcely fall.

The importation of coal from abroad is shown by the following table:

Year.	Quantity.	Value.	Average value per ton.
	<i>Tons.</i>		
1890.....	1,786,577	\$6,144,357	\$3.44
1891.....	1,765,327	6,005,051	3.40
1892.....	1,682,808	5,108,402	3.03
1893.....	1,581,745	4,696,503	2.96

Hence, we see that the average value of imported coal during 1893 was \$2.96 per ton.

The principal countries from which coal came in 1893 were Germany, 972,000 tons; France, 348,000 tons; and England, 258,000 tons.

From the preceding figures, it would seem as if American coal might compete at least with foreign coal imported, and, possibly, with the native product. Everything depends on the freight rate. If, as stated in the article quoted, a rate of 62 cents per ton for ocean freight could be secured, there would not seem to be any doubt of successful competition. It might be practicable and cheaper to ship coal by way of the Ohio and Mississippi rivers to New Orleans and thence to Europe, thus obtaining a water route the entire distance.

When we consider Belgium, we find that Ghent, probably, would be the port of destination offering the most advantages, chiefly because of the low freight rates. Several steamers come here annually from Southern ports with cotton cargoes. These same vessels could bring coal as ballast and the freight would be nominal. Steamers of 1,800 to 2,000 tons can come alongside the wharves. Again, the consumption of coal in Ghent and vicinity is large. A reliable authority informs me that 160,000 tons of semibituminous coal is burnt annually at Ghent for the production of steam, while 50,000 tons of bituminous coal is employed. The price of Belgian semibituminous coal delivered at the factory in Ghent is \$2.32 per ton. Of this amount, \$1.54 is the cost to the dealer, 68 cents for transport charges, and 10 cents for dealer's profit. Belgian semibituminous coal contains 75 to 80 per cent of slack and only 20 to 25 per cent of lumps. Its productive capacity is about 8 pounds of steam for every pound of coal; it contains 12 to 13 per cent of ash.

American coal merchants should compare their statistics with these figures. My own idea is that American coal of the same designation is of much superior quality. In calculating prices, it should always be borne in mind that a Belgian ton contains 2,204 pounds. Owing to the method of construction of Ghent mills and manufactories, semibituminous coal is almost the only quality used for the production of steam.

As a matter of information, however, it may be stated that Belgian anthracite, 1¾ to 2-inch lump, sells at \$4.54, delivered in Ghent.

American coal dealers should endeavor to treat directly with Belgian merchants of the same description, without the intervention of English agents. A case has come to my notice of an English firm representing a large American house, which, while bearing the title of "agent," has actually discouraged a prospective purchaser of American coal residing in this city. In making any propositions of sale it would be preferable, indeed almost indispensable, to quote a freight rate from the port of shipment to Ghent or Antwerp. The matter is certainly worth the attention of American miners. For my part, I am prepared to give all the information possible. Catalogues, prospectuses, and letters addressed to this consulate will receive the attention of the gentlemen already mentioned as anxious to open American trade.

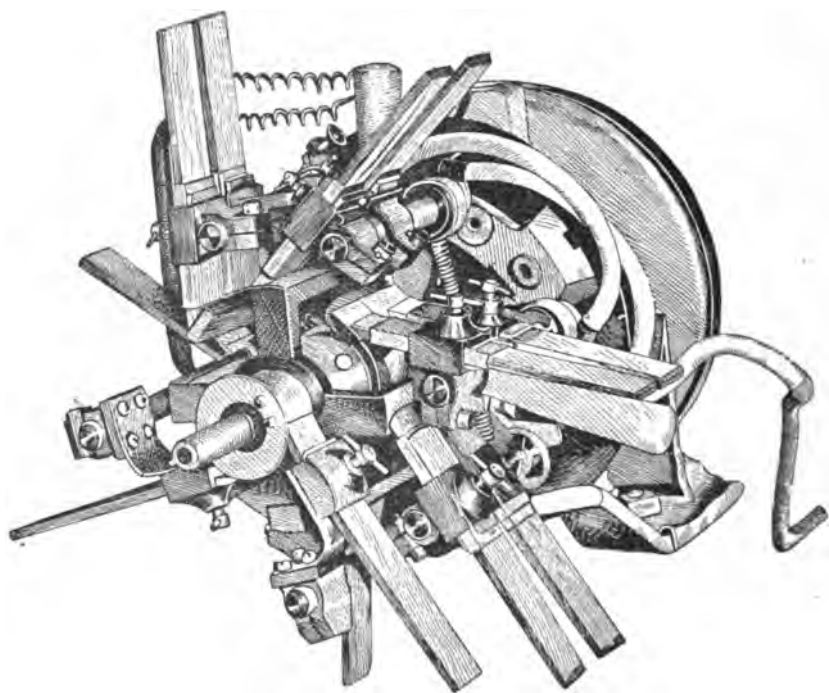
HENRY C. MORRIS,

GHENT, *June 27, 1895.*

Consul.

A NEW ELECTRICAL-CURRENT RECTIFIER.

The rapid extension of incandescent gas lighting during the past two years, its comparative cheapness and high degree of brilliancy, added to the now demonstrated possibility of changing its tint by varying the combination of oxides in the incandescent mantles, have combined to check somewhat the adoption of electric lighting in Germany, and to force electrical companies to seek new outlets for their energy in the directions of motive power and electrolysis. The central electrical system established at Frankfort a few months ago has proven technically successful, but private consumers generally complain of its high cost, and it is already evident that the



financial success of the enterprise will depend in future upon the more general adoption of electricity for motive and electro-chemical purposes.

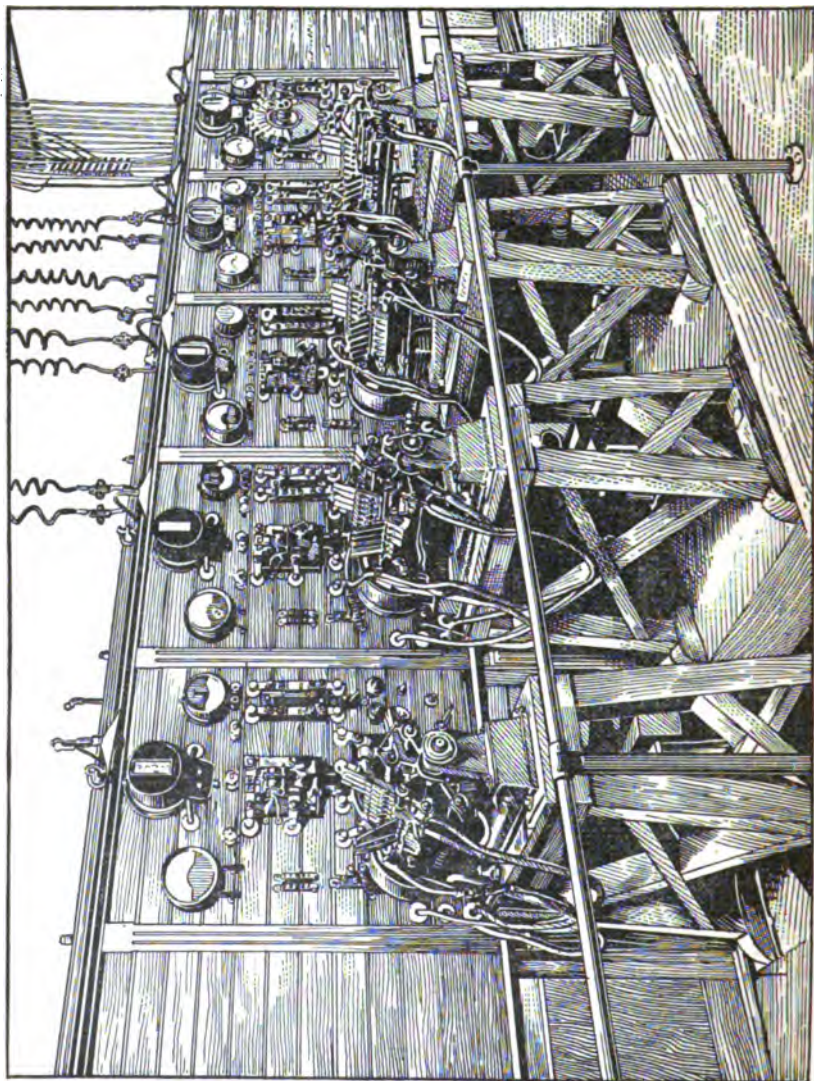
These conditions have lent exceptional importance and interest to a device known as *Gleichrichter*, or rectifier, invented by Mr. C. Pollak, a Frankfort engineer, which solves the hitherto stubborn difficulty of converting an alternating into a direct electrical current with a loss of but a trifling percentage of its energy. In nearly all cases where the central generating station is located at any distance exceeding a mile from where the electrical energy is to be finally used, alternating currents are preferred as more available than continuous ones, for the reason that the former can be readily

condensed to very high pressures and in that condition transmitted to any reasonable distance, and then reduced to low-working potential by stationary transformers. A continuous current, on the contrary, can be reduced only by the use of a working converter, running in synchronism with the central generator—an additional machine which greatly increases the cost of the plant. For this and other reasons, alternating currents are usually produced at modern power stations in Germany, and while equally available for incandescent lighting and for motors which can be run synchronously with the dynamo, they are distinctly inferior for arc lighting, and can not be used at all for electrolysis or charging storage batteries.

The invention herein described bridges, therefore, an industrial difficulty which has become more and more serious with each step of progress in transmitting electrical energy over long distances from the place of generation. Electricity is supplied at Frankfort from the municipal central station at $7\frac{1}{4}$ pfennigs (a little more than $1\frac{3}{4}$ cents) per unit, in the form of single-phase alternating currents of 3,000 volts. At the accumulator works, where the Pollak system has now been in successful operation for more than a year, this current is reduced by transformers to 65 volts and then rectified—that is, converted into a direct current by the new device, which may be described briefly as follows:

It is well known that every continuous-current generator produces to a greater or less extent alternating-current impulses, but in such machines this tendency is corrected by the commutator, which is fixed directly on the armature shaft and imparts to the entire current a uniform direction. The problem was, therefore, to devise a plan by which a commutator, located at any distance from the dynamo creating alternating currents, and turning synchronously therewith, should have the same effect of turning the entire current in a uniform direction—in other words, converting the alternating currents after they have passed into the outer circuit into a direct one. For this purpose, the present invention employs two collector rings and two rows of commutator bars, the latter insulated from each other and the shaft and alternately connected with the rings. The alternating currents, having been received from the central station and reduced to 65 volts as above stated, enter the machine through brushes resting on the rings. The direct current is taken off by four more rows of brushes arranged adjustably, the first and third and the second and fourth rows being connected with each other.

The rectifier is turned by a synchronous motor of small dimensions, which receives its alternating currents, likewise reduced to 65 volts, from a small special transformer provided for that purpose. The outer circuit of the continuous current which passes from the rectifier includes an automatic disconnector, fluid-resistance ampèremeter, and, in various parallel shunts, electric motors and cells with their volt meters and other apparatus. The converted current produced by the rectifier is not entirely continuous, but pulsating, the length of the pulsations being governed by the width of the



commutator bars and the speed of the central generator. The duration of contact can be regulated by adjustment of the brushes, and this adjustment should be so made that the motive force of the current shall not fall below that of the battery, which would otherwise charge back into the circuit.

Four of these rectifiers, each for 350 ampères, have been in continuous service day and night at the works of the company in Frankfort for more than a year, with such complete success that the system may be fairly claimed to have passed the experimental stage. Their efficiency is stated to be 96 per cent—that is, the alternating currents are converted into direct ones with a net loss—including the slight reaction of about 2 per cent on the transformer—of only 4 per cent.

As every experienced electrician will readily infer, the direct pulsating current thus created is admirably adapted for electrolytical work, it being an established principle that the induced currents resulting from such pulsations greatly promote electrolytical action. It also lights arc and incandescent burners, runs continuous-current motors of all sizes down to the smallest, and is used for charging storage batteries, which is the chief function of the Frankfort company. The rectifier and its accessories are exceedingly compact, the whole installation, including seven transformers, occupying only 25 square yards of space, within which compass the apparatus and its capacity might easily be doubled should occasion require. The rectifiers are small, require no other foundation than wooden trestles resting on a solid factory floor, and demand no more oversight than an ordinary dynamo. From the testimony of the inventor and the numerous experts who have visited Frankfort specially to examine the system, the current supplied by the new rectifier is for all practical purposes identical in value and effects with the continuous currents hitherto produced in the ordinary manner.

FRANK H. MASON,
Consul-General.

FRANKFORT, *October 25, 1895.*

ART EXHIBITION IN BERLIN.

At the same time that the city of Berlin is to make an exhibition of industrial objects produced by her factories and artisans, the artists of Germany are to have a show of paintings and sculptures to commemorate the two hundredth anniversary of the foundation of the Royal Academy of Arts in Berlin.

This is to be an international exhibition, and American artists are to be invited. I have suggested to the promoters of the exhibition that they do not content themselves with the usual invitation to American artists residing in Paris, but direct a particular invitation to the home artists of the United States, especially to those of New York, Boston, Philadelphia, and Chicago. I have also made the suggestion that in case a representative collection of

art works can be assembled in America for exhibition here, the promoters of the coming show shall set aside one or more rooms where the artists of the United States can exhibit together.

The place is that recently occupied by the International Exhibition of 1895, a very large complex of galleries, built chiefly of iron and glass, for the most part well lighted from above, lying near the railway station for Hamburg and Bremen. It has extensive grounds, which include various restaurants and band stands, where the best people of the city come to pass the afternoons and listen to excellent military bands. The results of the recent exhibition were extremely satisfactory. The honors were taken by the French and American pictures. Among the German exhibits, those from Munich were easily the most interesting. As regards the award of prizes and medals, however, the latter were somewhat conventionally distributed. An unusually large number of works of art was sold, including a number of American pictures, Mr. Gari Melchers having been unusually favored.

The committee who will manage the coming exhibition includes the painter Count Harrach, as president, and the painter von Eckenbrecher, as honorary secretary. Other members, elected by the senate and by the members of the Royal Academy of Arts, as well as by the Society of Berlin Artists and by the Dusseldorf Academy, include the painters Knaus, Amberg, Thumann, and Carl Becker, the sculptors Siemering and Schaper, all well known in the United States. The business management is in the hands of Mr. Hermann Preckle, who may be addressed "Internationale Kunst-Ausstellung 1896, Berlin, N. W., Landes-Ausstellungs Gebäude."

Exhibits are to be confined to paintings, sculptural and architectural works, drawings, and works of the reproductive arts, which have been produced during the last ten years and not formerly shown in Berlin. Foreign works must be the work of living artists; there will be, however, a retrospective department for works by deceased and living members of the Royal Academy, extending from 1696 to 1896, and, under special circumstances, the committee may see fit to allow the exhibition of work by a deceased artist not a member of the academy.

No artist can send more than three exhibits, and he must sign them. Copies are not admitted. Architects may send photographs of buildings. Lists of intended exhibits must be in the manager's hands by February 15, 1896, and foreign works must be delivered at the galleries between the 18th and 25th of March.

Prizes will be awarded by His Majesty the German Emperor, King of Prussia, advised by an international jury of winners of medals and orders, which jury shall not have works of their own in the exhibition. Ten per cent will be collected on all sales of works of art made during the course of the exhibition, whether through the accredited agents or by private arrangement with the owners of the exhibits.

As soon as the completed prospectus shall appear, I will report how many and what the prizes, medals, etc., are to be; also, what success my

suggestion of a special home collection of art works has had with the committee. I shall also endeavor to have some American city designated as the center for the collection of the American exhibit, and shall ask that such city be placed on the same footing with Munich, Paris, London, or Rome—that is to say, shall have its own jury of selection. This should entail the advantage of free transport of art objects to Berlin and back again.

CHARLES DE KAY,
Consul-General.

BERLIN, *October 24, 1895.*

CENSUS OF PRUSSIA—GROWTH AND TRADE OF BERLIN.

Some of the results of the last census of Prussia, taken on the 14th of June, 1895, with special regard to trades and professions, have just appeared in an official journal devoted to statistics. These figures, in advance of the reports, may be of use to manufacturers and exporters.

The entire population of Prussia, which includes the provinces wrested from Poland, Denmark, and Saxony, as well as the seized Kingdom of Hanover, counts up for both sexes on the 14th of June, 1895, 31,491,209; by the last census (December 1, 1890), it was 29,955,281, an increase of 1,335,928, or 5.13 per cent. Of males, June 14, 1895, there were 15,475,202; December 1, 1890, 14,702,151, an increase of 773,051; females, June 14, 1895, 16,016,007; December 1, 1890, 15,253,130, an increase of 762,877.

In Berlin, the increase of females is especially marked, the increase being two and one-half times that of men. In the eastern provinces—Posen and Silesia—the increase of men is much greater than that of women. This may be laid to the fact that the new census was taken in summer, when many Poles from Russian and Austrian Poland come into Prussia to work in the fields during the harvest months. The relatively small surplus in Prussia of females over males, viz, 540,805, may also be ascribed in part to the stoppage of emigration to the United States since 1892. This affects more men than women, since men emigrate more readily than women.

The population of Rhineland is the largest unit in Prussia. This year it is 5,043,979, against 4,710,391 in 1890, an increase of 333,588; that of Silesia is 4,357,555, against 4,224,458 in 1890, an increase of only 133,097, notwithstanding the temporary harvest hands in summer. Posen, its neighbor province, has the lowest increase of all—about 20,000 souls. All parts of Prussia, however, show some increase.

The largest increase of population—that of Rhineland or the Rhenish provinces (333,588)—may be safely ascribed to the flourishing manufactures of that district, while the low figures in Posen, Silesia, and East Prussia are due to the depression in agriculture produced by the rivalry of the United

States, Argentina, and Australia, as well as by the unprotected state of the laborer in his relations with the landed proprietors.

One of the surprises of the new census is the small increase of Berlin's population, all the more remarkable owing to the unprecedented increase of Berlin for the years between 1870 and 1890. It is only 36,288, or 2.2 per cent for the past four years and a half. By the census of 1895, it was 1,615,082; 1890, 1,578,794; increase, 36,288. But this is not all. Like New York and Chicago, the city of Berlin has been bragging of its population and looking down on all the other cities of Europe, except London and Paris. On June 15, 1895, the municipal bureau of statistics took a special count with respect to births, deaths, temporary absentees, and passing strangers, which resulted in a population of 1,734,185; Prussia's count on the day before was 1,615,082, leaving a discrepancy of 119,103.

The census shows a continuance of the movement toward cities from the country, in which Berlin has not had her usual share. The little town of Potsdam, near by, has, however, made a rapid increase. In all probability, the exaggerated prices at which land and apartments have hitherto been held in Berlin and the immediate suburbs, as well as the difficulties placed by various laws and officials in the way of builders, have had much to do with this stoppage in the hitherto steady increase of Berlin. While cities and towns show a general increase of 8.2 per cent, the country districts have increased only 3.7 per cent. Households have not increased in pace with the population. June 14, 1895, they numbered 6,644,098; December 1, 1890, 6,384,175; increase, 259,923.

Manufacturing concerns with hired hands or motors have increased in Prussia from 635,807 in June, 1882, (thirteen years ago) to 742,119, an increase of 106,312. For Berlin alone, the number has increased during the last thirteen years as follows: June 14, 1895, 59,744; June 5, 1882, 42,466; increase, 17,278.

The export to the United States from this consulate, which, of course, includes more than the city of Berlin, maintains for the present the steady increase which began early in the present year. For the past three months, the value of goods in invoices legalized at the consulate-general surpasses the valuation for the same three months in 1894 by nearly \$1,000,000, viz: July, August, and September, 1895, \$2,095,308.75; same period in 1894, \$1,097,872.39; increase, \$997,436.31.

The industrial exhibition to be held next year at Treptow Park, on the upper course of the Spree River, is to show the increase of manufactures in Berlin, which is already foreshadowed by the above figures. Great preparations are being made for this exhibition in the way of electric lines, new bridges, and communications by water. The exhibition is, however, by no means the only one to be opened in Germany next year. There will be one in Dresden and another in Nuremberg, with, perhaps, a third still to be heard from.

CHARLES DE KAY,
Consul-General.

BERLIN, *October 2, 1895.*

CUSTOM-HOUSE REGULATIONS IN NICARAGUA.

Consul Thomas O'Hara, at San Juan del Norte, Nicaragua, in a report to the Department of State, dated September 27, 1895, transmits the following decree of the President of Nicaragua, intended "to check smugglers: "

ARTICLE 1. Every person who desires to go on board of steamers or sailing vessels at anchor at the ports of entry of the Republic shall solicit a written permit from the chief officer of the port, the administrator of customs, or the governor intendant, respectively.

ART. 2. Any person who shall have gone on board with the corresponding permit shall be obliged, on landing, to present himself at the custom-house, whether he carries goods or not, that he may be searched by the accountant thereof, who may order such steps as he may think necessary to be taken to prevent the interests of the fisc from being defrauded.

ART. 3. Any person who shall contravene the dispositions of the foregoing articles, shall suffer a penalty of from \$5 to \$25, which the administrator will apply authoritatively for each offense, without prejudice to the penalties, which, according to law, he shall be subject to if there should be any fraud; and he shall hereafter be refused permission to go on board vessels.

ART. 4. Owners of craft under 2 tons employed in the coasting trade shall register their craft with the administrator of customs or governor intendant, and bind themselves, under a penalty of \$50 to \$200, not to knowingly take part in any illicit traffic nor contravene in any other way the provisions of this decree.

ART. 5. A register shall be kept for that purpose. The administrator of customs or the governor intendant shall issue certificates of registry to the parties interested on stamp paper of the third class, and shall demand a bond from responsible persons for the amount which the owner of a craft may have been fined if he, the owner, be not a responsible person.

ART. 6. The owners or captains of registered craft against whom it shall be proven that they conceal goods liable to duty, or aid in the clandestine introduction of such goods or in any way contravene the provisions of the present decree shall, apart from the established penalties, be declared incompetent to engage in the coasting trade referred to in article 4.

ART. 7. The owner or captain of craft not registered, and of less than 2 tons, who shall go on board steamers or large sailing vessels, will be subject to a penalty of \$25 to \$100, which shall be applied authoritatively by any of the port authorities, and shall be declared incompetent to obtain a certificate thereafter.

ART. 8. During the hours that steamers ride at anchor in the port there will be one or more coast guards, whose duty it shall be to watch as to the strict compliance of this law and to search scrupulously all craft coming therefrom.

THE SOUTH WALES TIN-PLATE TRADE.

On every hand signs are observed of better times in this country, and in no industry is there more hopefulness just now than in the tin-plate trade, which, for a considerable time past, has been so depressed that numbers of the skilled workmen have been glad to leave the country with a view to employment in the new works opened in the United States.

It is remarkable how decided has been the change in the popular feeling quite recently in consequence of the news that the price of steel in America

had been raised to such an extent that tin plates could not be manufactured at competitive prices. For the time being despair has given way to hope, and all concerned in the national industry of South Wales are looking forward to a period, if not of prosperity, of more constant work and higher wages.

An immense improvement has already taken place here in the steel trade, although, as yet, the prices have not been enhanced to the same extent as in the United States; and herein lies the hope of the tin-plate makers, for if it should ensue that the boom in prices corresponded in degree to that which has taken place in the United States, the Welshmen would gain no advantage. Beyond a certain point, what would be the steel maker's gain would be the tin plater's loss. I note that the pig-iron market has been wavering throughout the week, although the finished iron and steel works are fairly well employed, and the restarting of works that have been idle for some time past is under consideration, because the demand has so increased as to justify it. Indeed, certain of the well-known firms have had necessarily to refuse extensive orders, and I am assured that in one case, for rails only, orders have already been booked which will keep the mills running constantly until the end of June next. To those who know how serious has been the falling off in the making of rails in the district within the last decade, the turn in the tide is very forcibly demonstrated by the glut of orders on the books of the firm in question. To-day's quotations on the exchange show:

Pig iron.—Glasgow warrants, 47s. 2d., 47s. 1½d., and 47s. 2½d., cash buyers; Middlesborough No. 3, 38s. 7d. prompt, other numbers in proportion; hematite warrants, 48s. 5d. and 48s. 3d. for mixed numbers, f. o. b. Cumberland according to brand; Middlesborough hematite, 46s. 1½d.

Welsh bars, £5 10s. to £5 12s. 6d.; angles, etc., at usual extras, f. o. t. at works.

Sheet iron, £6 5s. to £6 10s. f. o. t. at works.

Steel rails.—Heavy sections, £4 5s. to £4 10s.; light sections, £4 15s. to £5 15s., f. o. t.; sleepers, angles, channels, etc., according to section and specification.

Steel sheets, £6 5s. to £6 10s., with the usual extras for the higher gauges.

Bessemer steel.—Tin-plate bars, £4 5s. to £4 10s.

Siemens tin-plate bars.—Best, £4 7s. 6d. to £4 12s. 6d. all delivered in the district, cash, less 2½ per cent.

Tin-plates are quoted as for bessemer steel coke, 10s. 6d. to 10s. 9d.; Siemens (coke finish) 10s. 9d. to 11s.; Terns, per double box, 28 by 20 C. 19s. 3d., 19s. 9d., to 22s. 6d.; best charcoal, 13s. to 14s. according to finish of brand; wasters, 6d. to 1s. per box less than primes; odd sizes usual extras and all delivered in dock.

The prices quoted above are ridiculously low, and it is not surprising to learn that "for some time past the export has been withheld with the view of depressing the prices, but makers are obliged to hold out for higher prices in view of the further advance in the price of bars, which are being quoted to-day for immediate delivery at £4 10s., which is an increase upon last week of about 5s. (\$1.25) per ton. It is well understood that at the present selling price, the plates can not be manufactured without leaving a serious loss, and, rather than incur this, manufacturers will work out their contracts

and stop." All of which serves to point to the immediate advance of prices with regard to tin plates and to a larger measure of prosperity than has attended this industry since the year 1893.

I append the Board of Trade navigation returns for the month and nine months, respectively, ending September 30, 1895, during which period the summaries of exports generally, from Great Britain, show an increase of more than 10 per cent.

It is worthy of note that the manufacturers are bestirring themselves in the direction of opening new markets, because they feel that their hold upon the American market is by no means a firm one. An idea has become prevalent that tin-plate boxes would afford many advantages over the present system of packing tea in wooden boxes with a lead lining. It is claimed that the gross weight of a 100-pound box of tea is 135 pounds, whereas, if tin-plate boxes were used, the result would show only 125 pounds, or ten pounds less. Moreover, less space would be occupied in shipping, while the tea itself would be better preserved, as the boxes are hermetically sealed, and there would be no reason to fear that the tea would deteriorate. Merchants are urged to insist upon having their teas supplied in tin-plate boxes, and it is rumored that the manufacturers intend sending an agent to India for the purpose of instructing the natives in the art of making tin-plate boxes. The plan appears to be a feasible one, and its success will, to a great extent, depend upon the energy with which it will be put into operation; and who knows but that the outcome of the dreaded American competition will be to direct efforts for the opening of new and important markets?

Value of tin plates exported from Great Britain during the month and nine months, respectively, ending September 30, 1895.

Exported to—	Month ending September 30—			Nine months ending September 30—		
	1893.	1894.	1895.	1893.	1894.	1895.
Russia.....	£20,515	£20,651	£31,754	£273,207	£159,532	£267,643
Germany.....	3,125	4,610	4,330	32,173	39,650	41,913
Holland.....	7,129	5,058	6,417	53,397	40,611	48,150
France.....	31,068	13,222	8,421	115,839	101,724	133,399
Portugal, Azores, and Madeira.....	8,894	1,544	8,667	64,721	24,438	44,898
Italy.....	5,551	3,249	2,819	37,686	28,041	25,555
Roumania.....	4,737	2,016	4,154	54,418	62,343	28,545
United States.....	179,465	218,319	202,908	2,788,585	1,897,564	1,918,363
Brazil.....	4,460	6,458	4,894	52,267	40,709	36,708
Argentine Republic.....	3,422	1,737	2,753	30,146	26,486	17,283
British East Indies.....	7,725	11,235	11,024	58,868	66,099	94,794
Australasia.....	10,367	8,187	15,636	66,880	107,580	126,350
British North America.....	12,086	20,592	13,211	138,221	137,150	95,492
Other countries.....	30,483	21,782	18,345	213,810	247,417	234,952
Total.....	329,027	338,660	335,333	3,980,218	2,988,344	3,114,045

NOTE.—£1=54.86.

ANTHONY HOWELLS,

CARDIFF, October 23, 1895.

Consul.

EUROPEAN RAILROADS: MILEAGE AND SPEED.

The increase in mileage of the European railroads during the year 1894, was not a great gain over the preceding year. On January 1, 1894, the length of the European railroads was 238,586 kilometers (148,253 miles); on January 1, 1895, their length had increased to 245,330 kilometers (152,443 miles), a gain for the year of 6,744 kilometers (4,190 miles).

The gain in the principal countries was as follows:

Country.	Kilometers.	Miles.
Russia.....	1,092	678
Austria-Hungary.....	898	558
Germany.....	735	457
Spain.....	712	442
France.....	620	385
Sweden.....	452	281
Italy.....	442	275
England.....	312	224

The total number of miles of lines in operation in the principal countries on January 1, 1895, was: In Germany, 45,577 kilometers (28,317 miles); France, 39,979 kilometers (24,839 miles); Russia, 35,543 kilometers (22,082 miles); Great Britain, 33,580 kilometers (20,863 miles); Austria-Hungary, 30,038 kilometers (18,662 miles).

The speed attained by the express trains on European railroads suggests an interesting comparison. A memorial was presented to the International Railway Congress, recently held in London, by M. Ast, an Austrian railroad director, which gives the relative average speed of express trains in the principal countries. The fastest trains, as might be expected, were found in England; it is well to note, however, that American records were not taken into account. M. Ast's memorial gave the following:

Country.	Average rate of speed of express trains per hour.		Rate deducting time lost in stops.	
	Kilometers.	Miles.	Kilometers.	Miles.
England.....	83.3	51.75	84.4	52.43
Germany.....	82.5	51.25	84	52.18
France.....	81.9	49.88	83.4	51.81
Belgium.....	72.5	45.04	81.5	50.63
Holland.....	72	44.73	70.5	49.39
Italy.....	68	42.34	72	44.73
Austria-Hungary.....	67.2	41.75	70	43.49

These figures are necessarily lower than the rate of speed attained by the fastest express trains. For example, the expresses running on the two rail-

ways between London and Aberdeen cover the distance—539 miles—in ten hours, including stops, which is at the rate of 53.9 miles per hour. In France, the so-called “*Rapide de Marseille*” occupies thirteen hours in its run from Paris to Marseilles, a distance of 536 miles, a rate of 41.75 miles per hour.

Nor is speed the only advantage England has over France in the above comparison. The English train has third-class carriages attached to it, which are for the most part as comfortable as French carriages of the first class. The French train is composed of first-class carriages, and such an excessive extra fare is charged in addition to the regular fare as to restrict it exclusively to the rich.

England has, within the last few weeks, greatly surpassed the record above given, some wonderful runs having been made on the London-Aberdeen trip. The record for speed was increased almost daily for a time until it reached $63\frac{1}{4}$ miles per hour, and a record was made of eight hours and fifty-five minutes between the two cities, distant apart, as before said, 539 miles—a record until then unprecedented.

The widespread interest caused by this really wonderful performance had not ceased when the news came from the United States of the railway record run on the New York Central Railroad between New York and Buffalo, a distance of $436\frac{1}{2}$ miles, which was made in 407 minutes, or an average of $64\frac{1}{2}$ miles per hour. Americans may well feel proud of such an achievement, especially if, as stated, the New York Central intends running an express between these two cities which shall maintain this time.

In making a comparison between English and American trains, many things must be taken into consideration. In the former instance, the average weight of the train making the record between London and Aberdeen was between 105 and 120 tons. The Empire State Express, which was similar in make-up to the train that made the English record, weighed 250 tons—a vast difference and necessarily an important factor in speed.

Nor is this the only disadvantage the American record was made under; on English roads the roadbed is comparatively level, with no grade crossings, and the tracks in the cities and towns are either elevated or depressed. In the United States, less attention is paid to gradients, and a slow rate of speed must be observed when passing through cities and towns.

The commercial value of such vast strides in speed in America and England can scarcely be estimated. To bring the commercial centers into quicker communication is of immense importance to the mercantile interests of the country. Chicago brought within twenty-four hours of New York and the transatlantic voyage reduced to six days, the markets of the world are at our doors.

THEO. EWING MOORE,
Commercial Agent.

WEIMAR, *October 15, 1895.*

No. 184—6.

GERMAN INTERESTS IN EASTERN ASIA.

Since the war between China and Japan, and the action of Germany in the peace negotiations between the two Empires, the attention of German merchants has been drawn more than heretofore to the countries of eastern Asia. There are already indications that the German intervention will bear good fruits for German trade. It is claimed that German interests in the East are growing, and in commercial circles there is great satisfaction over the presence of a German squadron for the protection of German interests. Now comes a movement for taking advantage of the present favorable disposition of China toward Germany to secure a port, as compensation for her active intervention in China's favor, such as the English possess in Hong-kong. It can easily be seen that by the cession of a port a foothold of the greatest importance would be obtained for the trade and influence of Germany. A new period in the growth of Germany's commercial interests in the far East would be the result.

To show to some extent by statistics the increase of German interests in eastern Asia, I have prepared the following tables showing the trade of Germany with Asia, and especially with China, Japan, and Korea:

Imports.

From—	1889.	1890.	1891.	1892.	1893.	1894.
British East Indies.....	\$22,681,400	\$30,630,600	\$37,366,000	\$35,676,200	\$42,554,400	\$39,055,800
China.....	1,999,200	1,856,400	2,903,600	2,975,000	3,803,000	6,449,800
French Further Indies.....	47,600	23,800	23,800	23,800	.....	.....
Japan.....	809,200	1,118,600	1,713,600	1,856,400	1,808,800	1,666,000
Dutch East Indies.....	4,712,400	5,426,400	6,021,400	6,069,000	7,425,600	12,471,200
Siam.....	47,600	23,800	23,800	23,800	.....	47,600
Philippines.....	119,000	119,000	333,200	214,200	214,200	119,000
Other parts of Asia.....	119,000	333,200	238,000	142,800	190,400	119,000
Total.....	30,535,400	37,531,800	48,623,400	46,981,200	56,001,400	59,928,400

Exports.

To—	1889.	1890.	1891.	1892.	1893.	1894.
British East Indies.....	\$6,307,000	\$7,663,600	\$7,877,800	\$7,687,400	\$11,162,200	\$9,329,600
China.....	5,759,600	7,116,200	9,496,200	7,140,000	7,925,400	6,687,800
French Further Indies.....	23,800	47,600	23,800	23,800	23,800	23,800
Japan.....	4,493,000	4,493,000	3,403,400	4,069,800	4,426,800	4,069,800
Korea.....	.....	.....	23,800	.....	.....	.....
Dutch East Indies.....	2,094,400	2,618,000	2,998,800	2,665,600	3,189,200	2,665,200
Siam.....	142,800	95,200	71,400	71,400	95,200	71,400
Philippines.....	1,118,600	833,000	714,000	690,200	880,600	666,400
Other parts of Asia.....	214,200	142,800	119,000	71,400	95,200	119,400
Total.....	20,073,400	27,919,400	24,728,200	22,419,600	27,798,400	23,633,400

The imports into Germany from Asia have accordingly risen from 1889 to 1894 by over \$29,274,000, or 97 per cent, and her exports to Asia from 1889 to 1893 by \$7,735,000, or 39 per cent; from 1889 to 1894 by \$3,570,000, or 18 per cent. By far the largest percentage of this increase, both for imports and exports, falls to the British and Dutch East Indies, China and Japan being a long way behind, while all the other countries mentioned (except, perhaps, the Philippines, in the case of exports) deserves less consideration. But the increase of German trade to China and Japan since 1889 has been, nevertheless, large enough to demand careful attention to its further development, especially as favorable conditions for an advance exist. In the six years, 1889 to 1894, the total German import from China amounted to \$19,992,000 (a yearly average of \$3,332,000), and from Japan to \$8,972,600 (an average of \$1,499,400 per year). The German export to China is considerably higher; it amounted (from 1889 to 1894) to \$42,459,600 (a yearly average of \$7,028,600), and the export of Germany to Japan reached the sum of \$24,775,800 (an average of \$4,141,200 per year). German imports from China have been thus more than tripled since 1889, and those from Japan more than doubled, the result being that the imports from China almost equal in value the German exports to that country; whereas the exports of Germany to Japan are still far more than twice the value of the imports. But while Germany's export trade to China has considerably increased since 1889, her export trade to Japan does not show such a favorable result. There is no doubt, therefore, that German trade with China has developed since 1889 in a far more important and advantageous manner than the commerce with Japan, and the prospect of a further development in this direction alone suffices to explain the intervention of Germany in favor of China. The development of German commerce, in the several articles, with China, Japan, and Korea, will best be seen from the following comparative table, giving the figures of 1889 and 1894:

German imports from China.

Articles.	1889.	1894.
Raw cotton.....	\$18,088	\$825,146
Ethereal oils.....	22,610	71,896
Camphor.....	195,874	278,222
Gallnuts.....	256,802	441,966
Gold oar.....		2,008,958
Unprepared bed feathers.....	279,650	297,976
Bristles and substitutes.....	66,402	501,228
Limed hides.....	80,682	148,512
Rough bamboo.....	58,548	89,250
Cassia.....	22,372	79,492
Tobacco (unmanufactured).....	16,184	31,892
Tea.....	286,076	795,634
Furs.....	9,044	74,494
Raw silk.....	21,420	25,466
Straw bands.....	35,462	288,694
Wast and straw goods.....	46,410	117,096

German exports to China.

Articles.	1889.	1894.
Thick cotton textures.....	\$19,754	\$31,892
Cotton trimmings.....	27,608	59,500
Explosives.....	13,566	28,322
Aniline and tar dyes.....	945,574	1,482,740
Copper colors.....	35,462	32,606
Nitrate of potash.....	36,414	41,174
Gunpowder.....	111,860	138,754
Beer, in bottles.....	36,890	29,988
Woolen trimmings.....	704,956	508,130
Scraps and refuse iron.....	27,370	63,308
Malleable bar iron.....	239,190	119,952
Iron wire.....	101,150	83,062
Gun barrels.....	302,260	284,410
Iron and hardware.....	1,787,618	2,111,298
Hides and skins.....		28,084
Fine wooden ware.....	22,134	47,124
Alcoholic essences.....	13,090	31,892
Raw zinc.....	75,922	36,176
Cast-iron machines.....		50,932
Fine india-rubber goods.....		87,822
Copper ingots and plates.....		106,624
Ammunition and cartridges.....	44,030	600,474
Fine copper goods.....	96,628	57,834
Wall clocks and timepieces.....	27,846	64,736
Leather goods, coarse and fine.....		94,962
Woolen and worsted articles, not printed.....	577,864	284,410
Woolen yarns, 3-corded.....	45,458	85,918

Imports of Germany from Japan.

Articles.	1889.	1894.
Camphor.....	\$91,392	\$137,321
Antimony and metallic arsenic.....		51,646
Gold (specie).....		99,484
Growing plants, etc.....	64,022	58,310
Hides and skins.....	29,512	42,602
Bamboo.....	24,514	28,560
Mother-of-pearl shells, unmanufactured.....	57,834	96,390
Fine wooden ware.....	49,504	71,162
Metallic antimony.....	14,756	42,840
Copper, unmanufactured.....		409,360
Amber and ivory goods.....	21,420	44,268
Textile fabrics.....	45,458	31,416
Polished rice.....	31,654	73,542
Blubber of fishes and seals.....	28,560	122,094
Insect and vegetable wax.....	35,224	26,180
Bast and straw goods.....		40,460

German exports to Japan.

Articles.	1889.	1894.
Explosives.....	\$24,038	\$37,842
Alkaloids and their salts.....	66,640	128,520
Aniline and other tar dyes.....	114,240	305,354
Salicylic acid.....	76,874	43,316
Nitrate of potash.....		68,306
Chemicals, not given above.....	22,848	48,314
Iron and hardware.....	1,179,864	1,181,432
Railway materials.....	161,364	59,500
Malleable iron in bars.....	187,544	331,058
Iron wire.....	56,406	105,672
Bridges and parts.....	114,954	84,966
Wire nails, polished.....	479,808	430,066
Astronomical instruments.....	47,600	29,988
Locomotives.....	13,804	28,560
Cast-iron machines.....	125,182	39,032
Railway carriages.....	104,244	37,842
Ammunition.....	14,756	90,202
Wall clocks and timepieces.....		29,988
Paper:		
Packing.....		36,652
Gold and silver.....	91,392	184,926
Writing and printing.....	51,884	73,066
Half-silk goods.....	129,234	45,220
Woolens:		
Thread.....	165,648	393,652
Cloths and stuffs unprinted.....	1,095,752	423,878
Zinc in pigs and plates.....	24,038	124,474

German exports to Korea.

Drugs.....	\$5,712
Iron and hardware.....	2,856
Wooden ware.....	238
Copper and copper goods.....	1,428

German imports from Korea.

Horsehair, human hair, feathers, and bristles.....	\$476
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THEO. M. STEPHAN,

Consul.

ANNABERG, September 18, 1895.

EUROPEAN SEWING THREAD IN CHINA.

The following extract from a report of the Austro-Hungarian consul-general in Shanghai, sent to his Government, will undoubtedly be of interest to the manufacturers in the United States of the article in question:

Sewing thread on spools—cotton thread, reel of cotton, or bobbin; Chinese, *yang hsien*, i. e., foreign thread—which has become in the course of years a necessary article of use for the Chinese, has acquired a great importance at present in the foreign trade of China, and promises for the future still greater extension.

In the trade statistics published by the Chinese customs authorities, sewing thread has only appeared since the year 1887. The quantities imported were:

Year.	All China.		Shanghai.	
	<i>Pounds.</i>		<i>Pounds.</i>	
1887.....	114,661	\$34,341	9,693	\$12,756
1888.....	198,750	54,865	105,124	28,383
1889.....	155,998	46,312	104,572	31,371
1890.....	254,692	69,582	134,407	36,289
1891.....	237,188	63,556	114,057	30,111
1892.....	275,082	74,596	155,692	42,036
1893.....	210,144	54,242	87,972	21,112
1894.....	279,748	78,600	.....	.....

The decrease in the imports which took place in 1893 has its course in the decline of silver prices and the subsequently unfavorable exchange rates. The importers were forced to demand higher prices, which naturally tended to check the sale.

As chief sources of supply, England and Belgium must be named; Germany, however, has lately joined them. Of the English manufactories which export to China that of J. & P. Coates, in Paisley (trade-mark, a chain), stands first; it is represented in China by Carlowitz & Co. The products of this factory have commanded hitherto not only the Chinese, but the whole eastern Asiatic market. Other English manufactories are Clarke, and Bagley & Wright, in Oldham; Brooke, Marsland, and Chadwith & Co., in Manchester. In Belgium, the manufactories Cumont-Declercq, in Alost (trade-mark, a peacock), and J. B. Jelié (trade-mark, a unicorn), export to China.

Although it is not yet ten years since Belgium first appeared with its manufactures on the Chinese market, it has already good results to record, especially in the south of China. Almost the half of the southern requirements is now furnished by Belgium; and as also in the north the importation of Belgian goods is being constantly increased, this country is becoming every year a more dangerous rival for the English manufactures. Though the Belgian goods are far inferior to the English in quality, yet the former have a point in their favor which plays a very important part with the Chinese, and will probably turn the scale for the Belgian goods, viz, cheapness. It is only this which has enabled the Belgian article to obtain a footing in China, and to supplant the better, but more expensive, English thread.

The English article was introduced into China many years ago. The English goods of Coates and those of Brooke and Clarke are well known and approved, and as such obtain higher prices than new, unknown goods, even if the quality of the latter is quite equal to that of the English article. The Chinaman is thoroughly conservative, and holds with incredible tenacity to the commodity which has for years been found good and useful. To introduce a commodity with success among the Chinese, it is not only

necessary to work for some years without any profit, but it is also extremely advisable to distribute numerous samples gratis. The importer here even engages Chinese for this purpose, whom he sends into the interior to distribute the samples to the consumers directly, whereupon the agent tries to obtain orders. In this way, the attention of a large number of Chinese shopkeepers is called to the new article; the small consumer will naturally be glad to buy an article made accessible to him in this way, and it is an acknowledged fact that to such a proceeding English thread owes its place in the great Chinese market.

Austria and Germany have never made energetic efforts to obtain a share in the Chinese trade, and could hardly compete with Belgium in prices, although German goods, for instance, are cheaper than English.

The thread that comes into the market is of six and three cords, and it is chiefly in the latter that Belgium competes with the English article. Six-cord thread is sold only in 200 yards, three-cord thread in 100 and 200 yards.

The leading colors are white, black, and light and dark blue. White amounts to about 60 per cent of the consumption. Next to white comes black; a small portion is also imported in blue, while the other colors do not amount to much. The kinds mostly asked for are:

Two hundred yards, six cords.—No. 8, 4 gross; No. 10, 1 gross; No. 12, 1 gross; No. 16, 4 gross; No. 20, 1 gross; No. 24, 1 gross; No. 30, 4 gross; No. 36, 3 gross; No. 40, 4 gross; No. 50, one-half gross; No. 60, one-half gross; No. 70, one-half gross; No. 80, one-half gross; total, 20 gross per case.

Two hundred yards, three cords.—No. 20, 1 gross; No. 24, 1 gross; No. 30, 1 gross; No. 36, 3 gross; No. 40, 7 gross; No. 50, 5 gross; No. 60, 5 gross; No. 70, 1 gross; No. 80, 1 gross; total, 25 gross per case.

One hundred yards, three cords.—No. 8, 2 gross; No. 10, 2 gross; No. 12, 3 gross; No. 16, 3 gross; No. 20, 3 gross; No. 24, 2 gross; No. 30, 2 gross; No. 36, 2 gross; No. 40, 3 gross; No. 50, 2 gross; No. 60, 1 gross; total, 25 gross per case.

The market prices for Belgian manufactures are, approximately, 3.60 to 3.75 taels per gross for 200 yards, 6 cords; 2.45 to 2.60 taels per gross for 200 yards, 3 cords; 1.50 to 1.60 taels per gross for 100 yards, 3 cords; for the English article of Coates, 4.30 to 4.50 taels per gross for 200 yards, 6 cords.

The most usual packing is in white cardboard boxes of one-twelfth of a gross, twelve of such boxes being made up in blue paper into a package; each case contains 25 gross. On the lid of each box there must be a large label printed in black or red, showing, besides a stately factory, the way in which the article in question is placed upon the reels.

White thread is required on black spools; black and blue on white spools. The English make-up is regarded as standard. New reels varying from the English form are looked upon by the dealers with mistrust, and

would greatly hinder the introduction of new manufactures, if not entirely prevent it.

Besides the above-mentioned black, white, and blue threads, the so-called glazed thread in various colors, with 50 yards on a reel, forms a very considerable article of import. In this case, also, it is England and Belgium which command the Chinese market, though Germany has had some success as a competitor. The glazed thread is packed in cardboard boxes, covered with colored-glazed paper, blue or red, and provided with a glass lid. The spools are of unpolished wood and have a label above and below, one of which shows the trade-mark (*chop*) and the number of the thread, as well as the Chinese name of the Hong (*firm*), while the other contains a statement of the length in yards and the name of the manufacturer or importer, and sometimes the words, "made in Germany," or "made in Austria." A wooden chest with tin casing contains 100 boxes.

It is generally difficult to give definite statements as to color, because of the various uses in the different provinces. In glazed thread, blue of all shades, especially dark indigo blue, always plays an important part, as the Chinese prefer this color for their costumes.

The sale of new articles in China should only be placed in the hands of a single firm, well acquainted with the import trade, for the Chinese will very soon take advantage of the offer of one and the same article by several firms to beat down the price, to the ultimate disadvantage of the manufacturer. It must, further, be taken into consideration that a newly introduced article can in no case count upon obtaining the market prices of Coates, even if the new commodity is equal or superior to that of Coates. The Belgian and German articles already introduced, are actually quoted at 5 to 10 per cent cheaper, according to quality, than those of Coates. However, there seems to be no doubt that the article still offers a gain for the manufacturer, for it is well known that the Coates firm are introducing their goods under other names, and, therefore, at lower prices, simply in order to meet the Belgian competition.

THEODORE M. STEPHAN,

Consul.

ANNABERG, *August 6, 1895.*

THE FOUR NEW TREATY PORTS OF CHINA.

CHUNGKING.

Of the four treaty ports in China, opened under the treaty of peace with Japan, Chungking is the second city in the province of Szechwen, and is situated on the north bank of the Yangtze River, a little west of the 107th meridian, in latitude 29° 33' N. and longitude 107° 2' E. It is 360 nautical miles from Ichang, 720 from Hankow, and 1,309 from Shanghai. At present foreign steamers navigate this magnificent but dangerous river only as

far as Ichang, though the difficulty of navigating it, on account of the rapids as far as Chungking and even Chengtu, the capital of Szechwen, may be overcome by careful navigation. A good chart is needed to effect this, for practically none exists. Chungking, according to the Chefoo treaty of 1877, was to follow the opening of Ichang, but so far the Chinese have not fulfilled their promise to Great Britain. The province of Szechwen is undoubtedly the finest and richest province in the Empire, and the opening of Chungking will give a great impetus to foreign trade. At present, the 1,000 miles to Ichang are traversed by a steamer in one week, and the remaining 400 miles to Chungking takes from five to six weeks in a native junk, which is longer than the journey from Shanghai to New York. It may be here remarked that roads do not exist in China, but narrow tracks alone connect village with village and town with town, and all goods carried overland are carried on the backs of coolies. The mountainous district about Ichang presents great difficulties in the way of railways. From Chengtu, the capital, Chungking is situated about 1,200 li,* and distant 6,670 li from Peking. The population of Szechwen is estimated at from 130,000,000 to 135,000,000, and thus the possibilities of trade are great. The breadth of the city is about one and one-half miles.

Dr. James McCartney, in his report on the health of Chungking for 1893, says :

I wish to reaffirm what I have previously stated that Chungking, from its natural position, is more healthy than the average Chinese city.

The business hongts and yamens are in the lower city, and the missionary establishments and pleasure gardens and British consulate are in the upper city. There are a number of American missionaries resident at Chungking, and the city is situated in the midst of grand scenery. In the district, coal and iron are met with, and the former is worked in a very primitive fashion. The principal crops produced in the neighborhood are barley, beans, buckwheat, hemp, millet, opium, pease, rape, rice, safflower, sugar cane, tobacco, wheat, and numerous vegetables and excellent fruit. The principal products of Chungking are brass, copper, pewter, and white-metal ware. Cotton cloth, tapes, thread spun from Bombay yarn (although the natives are now beginning to use homespun yarn from Hankow), grass cloth, glassware, ironware, iron implements, leather ware, lacquer ware, matting, and matches are also produced. There are two match factories now in operation in Chungking. Silk and skins are produced. There are in the city sixteen native and one foreign postal establishments. On the way down to Shanghai, the mail matter is inclosed in waterproof bags which are fastened to the oars of the boatmen, so as to prevent the loss of mails should the boats be overturned in the rapids, which extend for 80 miles. The native post-offices, most of which are sound and reliable, undertake the forwarding of bills of exchange. Some of the best post-offices charge but 60 "cash" (6 cents Mexican or about 4 cents United States) per letter, or 300 "cash" (30 cents Mexican

* The li=2,115 feet.

or 20 cents odd United States) per li per catty* for parcels between Chungking and Hankow, a distance of 3,000 li.

According to the Chinese imperial maritime customs report in 1894, the net value of trade of Chungking increased by fully 2,000,000 taels.† The value of coast trade for the same year was estimated at 4,997,688 taels, against 3,677,235 taels in 1893, the increase being greatly due to native opium. Chungking has no direct foreign trade. The staples of Szechwen are horns, rhubarb, and musk. Feathers for foreign markets will some day become a staple export from Chungking. Cotton yarn imported shows an increase for 1894 of about 125,000 piculs‡ over 1893. Over 8,000 upward, and 10,000 downward, junks passed the station below Chungking during 1894. Some little time back, the French consul at Hankow visited Chungking, under instructions from his Government, at the head of a small expedition, with a view to prepare for the formation of a commercial syndicate in Szechwen.

HANGCHOW.

Hangchow is the capital of the Chekiang province, and during the later monarchs of the Sung dynasty, it was the capital of the Empire. It was once considered to be one of the greatest cities in the world, and such was the opinion of Marco Polo. The Chinese have a well-known saying, "Above is heaven, below are Soochow and Hangchow." The glory of Hangchow, like that of Soochow, departed with the Taiping rebellion, when each place was left a mass of ruins. Macartney's embassy of 1793 referred admiringly to the splendor and wealth of Hangchow as it then existed. The city is situated on a plain and is distant perhaps 2 miles from the northern bank of the River Tsientang, which falls into the sea 40 or 50 miles east. The river opposite the city is about 4 miles wide at high water, but the ebb leaves a fine level strand about 2 miles broad. In the northern suburb is situated an irregular basin which forms the southern extreme of the Grand Canal, and is supplied with water from the lake to the west of the city. Staunton said (in his Embassy, vol. II, page 439):

Between the river and the basin of the Grand Canal, there is no water communication; all merchandise, therefore, brought by sea into the river by the southward, as well as whatever comes from the lakes and rivers of the Chekiang and Fuhkien provinces, must be landed at this city, on their way to the northward—a circumstance which renders Hangchow the general emporium for all articles that pass between the northern and southern provinces.

The streets of Hangchow are tolerably wide, and many of the shops are of a superior type to those in the majority of Chinese cities. The main street, almost 4 miles in length, runs through the city from north to south in nearly a straight line. The railway line which it is proposed to build to Soochow is also to be extended to Hangchow, and it will thus place this city within a few hours communication with Shanghai. The poppy is extensively cultivated in the district surrounding this city, which also produces silks and other articles similar to Foochow.

* 1 catty = 1½ pounds.

† 1 tael = 77 cents United States gold.

‡ 1 picul = 133½ pounds.

SOOCHOW.

Soochow was founded in 484 by Holuwang. The literary designation of Soochow is Kusu, from the immense tower of Kusutai, built by Holuwang. Soochow was formerly estimated to be one of the largest cities in the world, and in 1880 it was said by the provincial authorities to possess a population of 7,000,000 in the city alone, and that was after having passed through the throes of the Taiping rebellion. It is situated in latitude $31^{\circ} 23' 25''$ N. longitude $4^{\circ} 25''$ E. of Peking, on the Imperial Canal, in the province of Kiangsu. It is in close touch with the sea, being but 55 miles west northwest of Shanghai, and has water communication with the latter port. The Emperor of China has recently given his consent to a joint proposition of the viceroy (Chang) of Nanking and governor (Chao) of Soochow, to connect Soochow with Shanghai by railway. When this is done, the line will be extended northward through Wusieh and Chinkiang, which will thus bring those towns into direct touch with Shanghai and open up the rich province of Kiangsu to foreign trade. But Chinese railway schemes have been heard of frequently before, and foreigners do not place much faith in such projects until the rails are laid and the rolling stock is on the metals.

The site of Soochow is practically a cluster of islands to the east of Lake Taihu, and streams and canals give communication with most towns of the province. Soochow, being the second city of the province, is the residence of a governor who acts by himself, being subordinate only to the governor resident at Nanking. The walls are about 10 miles in circumference, and there are four large suburbs. Its situation, in the midst of large channels of water, is beautiful; the country around is very pleasant; its climate is said to be delightful. From Shanghai, the way to Soochow is through a continual range of villages and cities, and the ground is everywhere cultivated, crops succeeding each other the year round. The country adjacent is flat, and except some hills of blue limestone, the soil is of a rich alluvial character. Cotton, silk, rice, wheat, rye, barley, and vegetables are common productions. All the numerous channels are filled with boats and junks laden with produce, and water carriage is really the only means of transport existing at present in China. It may be here stated that the Emperor is also reported to have given his consent to the establishment by a Chinese syndicate of a river service of steamboats, to run between Shanghai and Soochow, stopping at towns en route. At present, passage by junk between the two places takes about two days. There are the stern-wheel Chinese river boats which cover the distance in less time, but they are few. In these, there is a large stern paddle wheel, which is worked by the Chinese passengers with their feet, similar in principle to the prison treadmill. The Chinese thus work their passage up to Soochow, getting a free passage for the assistance they give.

The importance of Soochow as a productive center can not be overestimated, and it is yearly regaining the influence and wealth it possessed

previous to its destruction in 1860 by the Taiping rebels, being recaptured five years later by General Gordon. The city, which had been famous for its magnificent buildings and industries, was reduced to a heap of ruins.

At present, the chief product of Soochow is its fine silk, and as the demand for raw cotton increases at Shanghai, owing to the erection of new mills, cotton will be more extensively cultivated, but no doubt when direct communication is established between the two places, the Japanese and others will open cotton mills at Soochow, where labor and cost of production will be even cheaper than at Shanghai. In the vicinity of the city is a range of hills, denuded of trees, that would make an excellent site for foreign habitations.

SHA-TSZE.

Sha-tsze, or Sha Shi, is like all others above Hankow, but little known to the maritime world. In *Through the Yangtze Gorges*, Mr. A. J. Little speaks of this place as a populous center of trade, lying on the north bank of the river, just a little west of the 112th meridian of longitude from Greenwich. He refers to Sha-tsze as being regularly passed by all steamers plying between Hankow and Ichang, and as having ten times the trade of the latter town. Its population, estimated, is about 600,000, Chungking having the same. During the summer floods here, the river widens from 1 mile to 5 miles, and the stream runs about 3 to 6 knots, according to position. Near Sha-tsze, the river rises from 10 feet to 15 feet, and thus floods hundreds of miles of agricultural land, owing to the decay of the embankment on that side. Thus, the Toong-ting Lake, near by, is swelled from 2,300 to 4,000 square miles, from May to September. On the north shore, the dikes extend continuously as far down as Hankow, some 250 miles.

Sha-tsze is the most important *chen*, or mart, in that part of the Empire. During all seasons of the year, a perfect forest of masts of junks may be seen. These are of various tonnage, from 10 to 50, according to the size of the rivers and affluents they navigate. The name of the city in English is "Sand market," such probably designating its origin in the remote past. The city is built upon a great dike 25 feet above the surrounding country, which, for miles, is below the level of the river, even during the dry or winter season. Many of our best and latest maps of China place this important town on the south bank of the Yangtze, but Mr. Little puts it on the north, and in a somewhat different longitude to that given above. It has a noble stone embankment, built during China's greatness, facing the south and southwest, constructed in three different tiers, each 12 feet high, and ending in what has been a grand and spacious promenade on the top, but in 1888, there was in many places barely room for a sedan chair to pass. The otherwise beautiful embankment is now disfigured by hundreds of tons of filth and town rubbish, which have been cast over it into the water, but which the tide has not carried away. Immediately facing the embankment, there is little or no tide near the shore, and this is taken advantage of by "tiers upon tiers of junks" being moored along the whole

extent of the city front with their bows to the banks and planks to the shore. Fine stone stairs, crowned by archways for securing the continuity of the upper roadway, have been let into the face of the wall at regular intervals, but these have been long ago all but covered up by the deposit of tons of town refuse, the accumulation of ages, over which the merchandise of the port is now regularly carried by coolies. These "muck mounds" are still being added to with all kinds of filth from a city equally filthy, though possessing many very fine public buildings of stone, such as guild houses, monasteries, bridges, and lofty pagodas.

THE YANGTZE GORGES.

Some 60 miles above Sha-tsze, the rapids, or "Yangtze Gorges," commence, the latter being stupendous walls of perpendicular cliff attaining a height of 700 feet and upward. It is here that the river has cut a channel through the mountains. These peculiar chasms are narrow, and the water is generally insufficient for the passage of large steamers. The bottom is rocky, and the current runs about 6 knots an hour.

T. R. JERNIGAN,
Consul-General.

SHANGHAI, *September 26, 1895.*

LABOR AND WAGES IN CHINA.

No country in the world is more abundantly supplied with labor than China, and in no country in the world does the laborer receive less compensation. A Chinese laborer will save money on wages that would hardly be sufficient to supply the absolute necessities of an American laborer. This is made possible by the cheapness of the vegetable diet on which the Chinese laborer is content to live; the small cost of house accommodations, for several families will subdivide one room of a house and live in contentment in it, and the low price paid for clothing, which is made of the coarsest cottons. But the cheapness of labor in China does not mean that the products of that labor are inferior in quality. The Japanese laborer, receiving higher wages, is more artistic in his work—his productions are more finished; in dyes and in the blending of colors he is superior to his Chinese rival, but in substantial and lasting quality the latter is fully the equal, and, in some instances, the superior.

The silk that comes from the looms of Japan compares in gloss and fineness with any in the world, and Japanese crapes have a reputation in almost every market for softness of beauty and harmony of color; but for substantial wear, for lasting quality, the silk goods of China are most favorably known to the merchants of all lands.

Among western nations, the impression prevailed at one time that Asiatic races were more imitative than original, and that in the industrial departments where originality was the chief element of success, the Occident need

not fear the Orient as a rival. The test has been made, and the result has greatly modified, if not entirely removed, the impression. Within the last quarter of a century, Japan has thrown off a most oppressive form of feudalism and advanced to the forefront as a nation of progressive ideas. Twenty-five years ago, a system of government obtained in Japan which discouraged all liberal enterprise. Centuries of political slavery, entrenched in formidable prejudices, seemed to have crushed out the very soul of the Japanese people, and the Empire was dominated by the tyranny of great feudal chiefs, the remains of whose castles, now scattered over Japan, attest to the traveler the strength and wealth of the former owners and the servitude and poverty of their retainers.

All has given place to an enlarged liberty. With the adoption of a written constitution, the Japanese mind began to develop more rapidly, and in defining, by a written law, the organic structure of his Empire, the Emperor of Japan not only did what no other Asiatic ruler has ever done, but caused a new era to dawn upon Japan.

The gates of the Empire of Japan, so long closed to the westerner, were opened to his coming, and the Japanese soon learned to appreciate and utilize the productions of western thought and skill. To-day, the navy yards, arsenals, factories, banks, and large commercial houses of Japan prove that there is in Japanese character a reserve force which is destined, if judiciously regulated and directed, to assure still greater achievements in industrial fields. The attestations are too numerous to leave doubt that the Japanese are not only original in conception but possess the power of concentration and execution.

China is behind Japan in the civilization of the west, and an enchantment still lingers over Asia which western civilization has not removed by the stern realities which follow in its wake. The awakening of China, as prophesied by one of her greatest statesmen, has not been realized. The Empire still sleeps, but passing events indicate that the hour of awakening is not far distant.

There is in Chinese character a conservatism which has discouraged all progress in China. The principle, "let well enough alone," has been adhered to under the mistaken idea that "well enough" was the best; but in China this adherence to custom, this opposition to change, has filled the Empire with an impoverished population, for a people that use in their trade and business a currency of so small a denomination as one-tenth of a Mexican cent can not be said to have felt the quickening influence of an enlarged and civilizing commerce. The cheapness and small denominations of Chinese currency and the low price of the diet and clothing of the Chinese laborer are evidences of nonprogressiveness, but it should not be inferred from these that the capacity for progress is absent from Chinese character. The very conservative characteristics indicated, when they receive the influence of the modern spirit of progress, may prove the great balance wheel to steady China as she awakens to advance; and that China must awake ere

long to the solution of new problems, the thoughtful observer can not reasonably doubt.

And the problem of China's awakening should not be solved without the intelligent influence of the business men of the United States. The solution will involve more intimate and valuable trade relations with western nations, as well as define such relations in their future extent and value. Occupying the more favored geographical position, the United States can and should send to China much of their overproductions in exchange, if not absolute sales, for those of China's products that may be needed.

During the last fiscal year, the value of the trade relations between Japan and the United States was estimated, in round numbers, at \$28,000,000, but the figures show a balance against the United States of \$19,000,000. Japan is nearer to the United States than any other western nation, and several thousand miles nearer than Great Britain, and yet the balance sheet, for comparison, between Japan and Great Britain shows a balance in favor of the latter about as large as the balance against the United States.

During the same period, the value of the aggregate trade relations between China and the United States was estimated at \$24,000,000, with a balance against the United States of \$16,000,000, while in China, as in Japan, Great Britain checks off large balances in her favor, although more remote from China by thousands of miles.

The population of China is many times larger than the population of Japan, and with the varied productions of the United States there ought to be a much more valuable trade with China. This consideration should be regarded as of special importance at a time when the symptoms of political and commercial changes in China appear so clearly, even on the surface. When the 400,000,000 Chinese feel the influence of western civilization they will, as their Japanese neighbors have done, acquire and assimilate in many respects the habits and desires of the westerner, and the United States should be prepared to supply their share of the demands.

European nations are sustaining the efforts of European merchants more substantially than the American merchant is sustained. The latter, in the competition for Asiatic trade, has to rely upon his own skill and energy, while the merchants of Europe are encouraged by the aid given to the great steamship lines which carry their flags and pour the productions of Europe into Asiatic ports. At the port of Shanghai, the great commercial and distributing center of Asiatic trade, Great Britain, France, and Germany have direct mail and commercial communication—the steamers entering and leaving the port every week, carrying the flags of their respective nationalities, while no ship carrying the American mail and flying the Stars and Stripes touches at Shanghai at all. The American merchant must often unduly wait for his mail after its arrival at Yokohama, and send his purchases in foreign bottoms to the ports of his native land. The trade relations of the United States with China can not be satisfactorily enlarged until American merchants are secured a more advantageous position. They can not suc-

cessfully compete for Asiatic trade, even with the natural advantages of their geographical position, when such advantages are so greatly neutralized by such resources and means at the command of their competitors as referred to.

From this standpoint, the advantages to American interest of the cutting of the Nicaragua Canal would evidently be great. Should the United States cut the canal and say that vessels carrying the flag of the United States should pass toll free, or at very moderate tolls, for a certain period, would not the benefit to American shipping be almost incalculable? Would it not create a new life in the shipyards of the United States, and soon restore our flag to its former supremacy on the ocean? With an American bank and an American journal in China, both conducted by men whose known character would at once command confidence in all circles, and with the Nicaragua Canal completed, the commercial prosperity of the United States would approach nearer the blessings of our free institutions.

These observations have been suggested by the following table showing the price of Chinese labor:

Wages of Chinese at Shanghai, September 30, 1895, reduced to American currency.

Description.	Wages with food.	
	Per day.	Per month.
Blacksmith.....	\$0. 13	.....
Brass worker.....	. 16	.....
Barber.....	. 03	.....
Bootmaker:		
Native.....	. 10	.....
Foreign.....		\$5. 28
Bamboo cabinetmaker.....	. 11	.....
Bricklayer.....	. 10	.....
Compositor:		
Native.....		5. 28
Foreign.....		\$7. 92 to 15. 84
Carpenter.....	. 11	.....
Cabinetmaker.....	. 13	.....
Coolie*.....	. 13	.....
Bookbinder:		
Native.....		4. 22
Foreign*.....		6. 34
Lithographer*.....		10. 56
Furniture polisher.....	. 21	.....
Tailor:		
Native.....	. 10	.....
Foreign.....		6. 34
Pressman.....		6. 34
Coachman:		
Native.....		3. 17
Foreign.....		6. 34
House boy:		
Native*.....		2. 11
Foreign.....		4. 75
Cotton-mill machinist*.....	\$0. 11 to	. 22
Cotton-factory hands*.....	. 18	.....

* Without food.

T. R. JERNIGAN,
Consul-General.

SHANGHAI, October 11, 1895.

THE PORT OF SHANGHAI AND CHINA'S TRADE.

As China comes more under the influence of western civilization and commercial enterprise, Shanghai will increase in importance as a distributing center of foreign trade. It is now the commercial capital of the Empire, and it will then be a center of political, military, and diplomatic influence. At present, it is a port of call for tourists and the starting point for all who, for pleasure, information, or business, seek to penetrate the interior of China. In this respect, the unique position of Shanghai lends importance to the inquiry as to how the visitors and settlers from Europe and America are conveyed to China, and the routes likely to be patronized in the future.

There are at present eight steamship companies engaged in this passenger traffic—the Peninsular and Oriental Steam Navigation Company (British), the Compagnie des Messageries Maritimes (French), the North German Lloyd (German), the Austrian Lloyd (Austrian), the Canadian Pacific (British), the Pacific Mail, and the Occidental and Oriental Steamship Company.

The Peninsular and Oriental Steamship Company possess a fleet of fifty-five vessels (including seven now building or fitting out), with a total registered tonnage of 264,257 tons. This company maintains a fortnightly service to Shanghai, but passengers coming hither by it from Europe have to be transferred at Colombo from the best ships of the fleet to others of smaller dimensions and inferior accommodations, but fairly comfortable.

The Messageries Maritimes have a fleet of fifty-nine vessels, with a total gross tonnage of 195,933 tons. They render a fortnightly service between Marseilles and Shanghai, alternating with the Peninsular and Oriental. But the Messageries Maritimes passengers are not subjected to the inconvenience of a transfer from one ship to another. With the exception of the *Ernest Simons*, the tonnage of the French vessels employed on the China route does not exceed 4,259 tons.

The North German Lloyds have a fleet of thirteen vessels, with a total registered tonnage of 213,351 tons. Of this fleet, nine come to Shanghai from Bremen, their tonnage ranging from 5,316 to 6,613. The service is monthly.

The Austrian Lloyds have a fleet of seventy-four vessels, with a total gross tonnage of 138,273 tons. The service of this line to Shanghai, which is also monthly, is performed by eleven ships, of which the *Marquis Bacquehem* has the highest tonnage (4,409) and the *Berenice* the lowest (2,625). The service is an accelerated one between Trieste and Bombay, where passengers to China are transferred to one of the eleven ships referred to.

In addition to the first-class companies conveying mails and passengers to and from Europe through the Suez Canal, there are four others on the same route, which, while chiefly carrying freight, afford passenger accommo-

ditions to a limited extent. They are the Glen Line, the Shire Line, the Ocean Steamship Company (Blue Funnel Line), and the China Mutual.

Regular direct communication between Shanghai and the American continent is maintained by the three steamers of the Canadian Pacific Railway Company—*Empress of India*, *Empress of China*, and *Empress of Japan*, all three of 6,000 tons. The service performed by this line consists of fifteen voyages each way in twelve months.

From the foregoing, it will be seen that the passenger traffic to Shanghai is well catered for by the leading European countries and Canada, and, in this connection, it may be pointed out that the first-class steamship companies named are subsidized by their governments, who do all in their power to foster the carrying trade under their respective flags.

With reference to vessels flying the American flag, the facts are: There are three American steamship companies carrying mails and passengers across the Pacific to China—two from San Francisco, viz, the Pacific Mail and the Occidental and Oriental, which, however, have a working arrangement which makes their interests identical, and the Northern Pacific Steamship Company, whose port of departure is Tacoma.

Not oftener than once a year has a steamer of the San Francisco lines anchored off Woosung or Shanghai. Indeed, it is not easy to obtain reliable information here about them, the agency being in the hands of a Japanese steamship company, the Nippon Yusen Kaisha.

The Pacific Mail and the Occidental and Oriental have between them a fleet of eight ships, several of which are as fine as those of any line, large, and all comfortable, but the aggregate gross tonnage I do not know. These steamers bring passengers and mail to Japan, where those destined for Shanghai are transferred to the steamship lines from Japan to Shanghai.

The Northern Pacific (Tacoma) Company have a fleet of three vessels of a gross tonnage of 9,310 tons; to these must be added two chartered steamers, and there is a prospect of the fleet being increased at an early date. These steamers, however, only call at Shanghai during the summer months, when inducements are offered, the prescribed route being Tacoma, Victoria, B. C., Yokohama, Kōbe, and Hongkong. During the winter they never touch at Shanghai, and homeward passengers are not even booked from here, but have to find their way first to Japan as best they can.

That the future route to China, with or without the Nicaragua Canal, will be across the Pacific is a fact admitted here even by persons interested in and connected with the carrying trade through the Suez Canal. The question is, into whose lap the fruit now ripening will drop. Every natural advantage is on the side of America. The Canadian Pacific steamers accomplish the voyage from Vancouver to Shanghai in nineteen days, and could reduce the time to seventeen. The Tacoma and San Francisco lines should be able to make equally good time. The time required to Marseilles, via the Suez Canal, is thirty-three days. A passenger bound from Shanghai to London via Vancouver, over the American continent and across the

Atlantic, would reach his destination four days earlier than if he traveled by way of the Suez Canal. The fares by the Pacific route compare favorably with those of the British and French lines, and could possibly be still further reduced, for the North German Lloyd Company states that passengers to China from Europe by way of America can obtain through tickets in Bremen at prices considerably lower than those charged in New York.

It would seem from the above facts that the time has come when something should be done to modify the present disparity between the United States and European countries in the carrying trade of Shanghai. Freight will follow in the wake of passenger traffic, and it should be remembered that half of the whole trade of China in foreign vessels is credited, in the official returns, to Shanghai.

Having pointed out the principal ocean routes to Shanghai, and the nationalities of the different steamship companies which travel them, a general survey of the value of the trade of China seems appropriate, based upon the Chinese customs returns for 1894.

In 1894, the trade of China was affected by drought in the south, bubonic plague in Canton, involving quarantine at most coast ports, the outlook of war with Japan, floods damaging cereals in the north, and destructive typhoons, which injured the rice and sugar crops in the south. Despite these adverse influences, the trade returns show a steady increase, every division of trade contributing to the increase, with the exception of Indian opium and the importation of wool.

The imports of shirtings and American drills and sheetings exhibit a considerable increase, and both American and Russian oil appear in the returns for conspicuously larger deliveries than in former years, the statistics of the American product exceeding those of 1893 by 14,950,000 gallons. The importation of woolen fabrics, however, exhibits a serious decline, representing a shrinkage in value of over 1,000,000 taels.

Stimulated by the low rate of exchange, the demand for Chinese products was brisk, and the assessed value of exports shows an increase of 11,400,000 Haikwan taels, principally contributed by raw cotton, white raw silk, oils, hides, skins, and wool.

A noteworthy feature in the trade of raw cotton is the export to Europe of over 104,000 piculs. Japan, however, continues to be the principal consumer, over 500,000 piculs being shipped to that country. It may be noted here that, in 1894, Japan imported raw cotton from China to the value of 8,561,955 yen, whereas her imports of raw cotton from the United States for the same period amounted to only 2,680,671 yen.

Surprise has been expressed that American merchants do not study the Japanese markets more. Considering that, during the last fiscal year, American merchants purchased goods from Japan to the value of \$23,682,583, against \$4,634,655 purchased by Japan from the United States, and considering the preference shown by Japan for the inferior cotton of China over the American product, it might be as well if Japanese merchants would

study a little more the markets of the United States. Were the purchases of American merchants in the Japanese markets to stop, there would be a falling off at once of \$23,682,583 from the export trade of Japan. If Japanese merchants were to make themselves more familiar with the markets of the United States, there would probably soon be a fairer and more reciprocal exchange of trade between the two countries.

The value of the foreign trade of China during the last five years has been as follows:

Year.	Net imports.	Exports.	Total.
	<i>Haikwan taels.</i>	<i>Haikwan taels.</i>	<i>Haikwan taels.</i>
1890.....	127,093,481	87,144,480	214,237,961
1891.....	134,003,363	100,947,894	234,951,257
1892.....	135,101,198	102,583,525	237,684,723
1893.....	157,362,819	116,632,311	267,995,130
1894.....	162,102,911	128,104,522	290,207,433

The customs revenue during the above years from the imports and exports and coast-trade duties, the tonnage and transit dues and the opium likin was, in 1890, 21,996,226 Haikwan taels; in 1891, 23,518,021; in 1892, 23,689,054; in 1893, 21,989,300; and in 1894, 22,523,605.

In the amount of foreign trade above given for 1894, the imports from the United States figure for 9,263,082 Haikwan taels, and the exports to the United States for 16,442,788; total, 25,705,870. Great Britain—imports from, 29,943,379; exports to, 11,500,254; total, 41,443,633. The Continent of Europe (Russia excepted)—imports from, 5,770,594; exports to, 19,119,081; total, 24,889,675. Russia—imports from, 1,058,728; exports to, 11,023,184; total, 12,081,912. To these figures, should be added for each country a proportionate share of the trade with Hongkong, as the imports from Hongkong come originally from, and the exports to that colony are finally forwarded to, the United States, Great Britain, and the coast ports of China. The Hongkong figures for 1894 were: Imports from, 82,424,351 Haikwan taels; exports to, 50,793,504; total 135,217,855.

Classifying the trade, I find that cotton goods were imported to the value of 52,105,448 Haikwan taels; woolen goods, 3,540,195; miscellaneous piece goods, 241,295; metals, 7,526,651; sundries, 65,353,255; a grand total of 163,102,911.

Among the exports, the highest figures were reached by silks, 42,644,582 Haikwan taels; tea, 31,854,575; and raw cotton, 7,361,343. Of the exports of tea in 1894, the United States took 403,197 piculs; Great Britain, 307,504; Australia, 85,523; the Continent of Europe (Russia excepted), 26,334; Russia, 757,287, plus 76,877 piculs forwarded from Hankow to Siberia and Mongolia by way of the Han River to Tan-chi-ling and thence overland.

Of the foreign vessels entered and cleared in 1894, the number sailing under the United States flag was 107, with a tonnage of 129,127; under the

British flag, 20,521, with a tonnage of 20,496,347; under the French flag, 293, with a tonnage of 34,829; under the German flag, 2,429, with a tonnage of 1,983,605.

Of the total revenue of all the twenty-four Chinese treaty ports (*i. e.*, open to trade), from customs duties, opium likin, tonnage, and transit dues, which, as already stated, amounted in 1894 to 22,623,605 Haikwan taels, Shanghai alone collected 6,470,008.

The above figures are compiled from the customs returns for 1894. They show that the value of the trade relations between China and the United States is greater than that between China and the Continent of Europe (Russia excepted), and that nearly a third of the entire customs revenue of China is collected at Shanghai.

If the United States had the same advantages in steamship facilities as Great Britain and Europe, their trade relations with China would be nearer 75,000,000 than 25,000,000. As it is, the total value of such relations with Japan and China aggregates over \$50,000,000. The means to maintain and increase such valuable trade relations merit the most careful consideration, especially at the present time, when other commercial countries are not only traversing every highway of the ocean, but utilizing the resources of diplomacy in the competition for Asiatic trade.*

T. R. JERNIGAN,
Consul-General.

SHANGHAI, *October 25, 1894.*

THE RAILROAD FROM TIENTSIN TO SHAN-HAI-KUAN.

About seventeen years ago, there was in the whole Empire of China one short iron tramway 10 miles in length. This tramway ran from the Kaiping coal mines, which mines are 80 miles from Tientsin to the sea. How long it had been built at that time, I do not know. The motive power of this railroad was man. The small cars were loaded with coal, pushed down to the sea, unloaded, and pushed back again. This work was done by coolies, who worked twelve and fourteen hours daily, and were paid 10 cents (Mexican) a day.

* The following clipping from the Japan Mail, relative to steamships in Japan, may be of interest:

"The outlines of the Government bill for the encouragement of maritime enterprise have already been reproduced in these columns. Details relating to the subsidies for new lines to be opened to America, Australia, Europe, Vladivostok, and the China coasts are said to be under discussion between the authorities and the Nippon Yusen Kaisha. Meanwhile, it may not be uninteresting to reproduce some figures from the Nichi Nichi bearing upon the number and tonnage of the Japanese steamers capable of engaging in foreign navigation. At the end of May last year, the number of sea-going ships registered was 56, with an aggregate displacement of 97,286 tons (60,473 tons register). The outbreak of the war and the necessity of transporting troops, arms, ammunition, and provisions led to a sudden and large addition of ocean-going steamers to the mercantile marine of the country. The number of steamers newly purchased on that account from abroad during the twelve months ending June last was 46, with an aggregate displacement of 121,346 tons (77,515 tons register), thus bringing up the total of ocean-going steamers to 102, and their aggregate displacement to 218,630 tons (187,988 tons register). As to the age of these ships at the end of June last, twenty-five were above 20 years, forty-seven between 10 and 20 years, and thirty under 10 years. Of the steamers purchased during the war, twenty are above 15 years and twenty-five under that age."

At this time the works were put in charge of a young English engineer, who, restless, enthusiastic, and modern, knew nothing of Chinese lethargy or the conservatism of their institutions. He ventured to propose many changes to facilitate the work and decrease the expenses. He was ignorant of Chinese superstitions of *fêng shui*, and that his desired changes would, in the eyes of the Chinese, displease the spirits of air and water with the result of ruined crops and disastrous climatic disturbances. The authorities at Peking promptly vetoed his attempts at progressive measures.

Despite the Peking Government, there was one thing he would have, and that was a locomotive, and to have a locomotive was to build it himself. His workshop was a mat shed, and the tools at his command were few. Four small driving wheels were ordered from the United States, an old disabled stationary engine furnished the boiler, and a broken-down winding engine the cylinders.

The "Rocket," as this engine was named, was a startling object to the Chinese as it flew over the track, with large yellow dragons emblazoned on its sides. Thus was made, owing to the determination and ingenuity of a young engineer as yet unimbued with oriental ideas, the first locomotive in China.

In due course, the Peking Government heard of the innovation. Consternation reigned, and the Rocket dragon was ordered to be summarily suppressed. The Chinese director of the mines, however, permitted its use for short trips inside the yard, and gradually the length of its travels was extended. It was found that war, pestilence, and famine did not follow, and that the *fêng shui* of the locality was undisturbed by the iron steed. Imperial permission was at last granted for its free use.

This was the beginning of railroads in China, and the man who, seventeen years ago constructed the Chinese "Rocket," is to-day the chief engineer and general manager of the imperial Chinese railroads. His name, familiar to all railroad men in America, is C. W. Kinder.

The line as at present finished, begins at Tientsin. The first important stop is at Tongku, 27 miles from Tientsin and 6 miles from the mouth of the Pei-ho, at the Gulf of Pechihli. Both Tientsin and Tongku are on the Pei-ho, by which waterway steamers reach Tientsin. From Tongku, the road swings off to the northeast to Shan-Hai-Kuan—the terminus of the present operated line and the terminus on the Gulf of Pechihli of the Great Wall. Shan-Hai-Kuan is distant from Tongku about 150 miles. Surveys have been made for 200 miles beyond the gap in the Great Wall at Shan-Hai-Kuan, and construction has been completed for a distance of 10 miles.

The line, when finished, will run to Kirin, the center of Manchuria. A branch will also be built to the head of the Gulf of Liao-tung, where there is a good harbor. During the recent war with Japan, work on the road was interrupted and has not yet been resumed.

A trip over this line to Shan-Hai-Kuan presents many points of interest. All the foreigners employed are either English or Scotch; English methods,

therefore, largely prevail. The greater part of the line runs through a flat alluvial country, which, during the rainy season, is subject to heavy floods. The location of the line presents no engineering difficulties. The sharpest curve has a radius of 1,000 feet. There is only one of these curves, and it was made necessary, not by the contour of the country, but by the location of two private cemeteries that could not be molested. The majority of the curves have a radius of not less than 3,000 feet. The maximum grade is three-fourths of 1 per cent.

The country from Tientsin to Shan-Hai-Kuan contains no large towns or cities, but a great number of mud villages. As yet, it is strictly an agricultural country. The staple product is corn, insufficiently produced to support the natives. The Kaiping coal mines, about 80 miles from Tientsin on the road, comprise the only mining industry as yet in operation, although there are deposits of coal, iron, gold, and silver awaiting the intelligent application of capital.

The natives are very poor, and it is only by putting the railroad rates down to a mere trifle that they can be induced to travel. To give an idea of the condition of the people, I would state that at and around Tong-shan, the center of the operated line, and the location of the Kaiping coal mines, it has been estimated that about 50,000 natives died of starvation during the months of March and April of this year.

The trains are all "mixed"—freight and passenger. From Tientsin to Tongku, there are four trains each way daily, and from Tongku to Shan-Hai-Kuan, there is one train each way daily. The trains are not all heavy, and, in speed, average 15 miles per hour. The road usually pays its running expenses, but as yet has yielded no interest on the first cost of construction and equipment. I have been unable to ascertain the cost of construction.

The building of the road, with its entire equipment, has been done with the English idea of permanency, and without regard to first cost, or the work required of it. No wooden structures are seen from one end of the line to the other. Stone, brick, concrete, or steel are the materials used. The road is a standard gauge, and its bed is somewhat wider than in our country. On the subgrade, there are 12 or 15 inches of stone ballast, all of which is broken by hand. The company has at Shan-Hai-Kuan, one small Blake crusher with which it is experimenting, but owing to the cheapness of coolie labor it is doubtful if steam crushers will pay. The rails used are steel, 60 pounds to the yard, Sandberg pattern. They were made at Barrow, England, or by Blockow & Vaughn, and were delivered at Takee for less than \$21 per ton—or at a price that can not be touched by any of our firms. The only profit received by the English firms was due to a fortunate rate of exchange at the time of delivery. The wooden ties are 8 feet long by 6 by 9 inches. They are spaced 28 inches center to center. Most of them come from Japan, some from Oregon, and a few from Vladivostock. They cost, laid, about 72 cents (Mexican) each.

Owing to the immense rainfall and to the limited time in which it falls, unusually large flood openings are necessary. In going over the line during the dry season, one looks with surprise at these openings in the grading, but in some cases they are not yet sufficiently large. Last year, 14 inches of rain fell in six hours at Shan-Hai-Kuan. During the rainy season of four months, the total rainfall is usually about 140 inches.

The soil is alluvial deposit, and varies in depth from 20 to 60 feet. The masonry on the line is all first-class cut stone, laid in English portland cement. The cost of this cement here is about 75 cents less per barrel than in the United States. The foundations for the piers, abutments, etc., are carried down to solid rock. The deeper foundations are laid by means of wrought-iron caissons, sunk by the pneumatic process, and then filled with portland-cement concrete. This system of foundations works well here, and the natives take kindly to it as "sinkers." The lengths of the spans used vary from 20 to 200 feet. The majority, however, are short and are deck girders. The head room, under the girders, is from 7 to 16 feet.

LAN-HO BRIDGE.

All of the bridge work is riveted, with the exception of the Lan-ho bridge, which is looked upon here as an engineering wonder. This bridge consists of two roadway spans of 30 feet each—ten spans of 100 feet each and five spans of 200 feet each. The total distance between the faces of the abutments is 2,170 feet. The 200-foot spans are pin connected, and are always spoken of as being of the American type. The design was made in England under the supervision of Sir Benjamin Baker, and may properly be described as of the American type, with English details. The result is curious, and to a certain extent, incongruous. The form of truss is the ordinary Pratt. The hip verticals are stiff members and nearly as heavy as the first parts. The lower cord is composed of one-half-inch steel plates 12 or 15 inches wide. They are spaced on the outside and inside of the posts. The ends are reinforced by plates riveted on each side in order to give sufficient bearing surface for the pins. The diagonal web members, both main and counters, are broad, thin plates with the ends strengthened by reinforcing plates. These diagonal members are riveted together where they cross. A light 2-inch angle iron runs the whole length of the truss, and is riveted to the intersection of the diagonals and to each post.

The lateral bracing is one of the most peculiar features of the design. The floor beams are heavy, well designed, and riveted to the inside of the posts. The tops of the posts are connected by stiff members at right angles to the trusses. The lateral diagonals, both top and bottom, do not start from the panel points, but from points halfway between the posts. They are riveted to the cords and intersect opposite the panel points where they are riveted to the floor beam in the lower system and to the brace between the posts in the top system. The bottom cord is latticed and stiffened in the center of each panel where the lateral diagonals are riveted to it.

What the advantages of this peculiar lateral system may be, I am unable to understand, and the cross strain that it will bring to bear upon the cords at their center panel points appears to me to constitute a very grave defect. There is this to be said, however, in regard to the actual safety of this particular bridge. The spans are only 200 feet. The train load used in the designing is many times heavier than the bridge will ever be called upon to bear, and the allowable strain, per unit of area, was small. Therefore, notwithstanding the peculiarity in some of the details, the bridge has undoubtedly a very large "factor of safety." There were eight proposals received for this bridge, one only being American.

At present the shop facilities at Shan-Hai-Kuan are such that all girder work up to 100 feet is done by the railroad company. In order to prevent scouring, many of the waterways are smoothly paved with large concrete blocks—the concrete being, in many cases, cheaper than stone. The dimensions of these blocks are about 3 by $1\frac{1}{2}$ feet by 1 foot thick and their composition one part English portland cement to sixteen parts of coarse river gravel and sand.

Just before reaching Shan-Hai-Kuan, the line runs across a flat valley about one mile wide. This valley has considerable fall at right angles to the track. During the dry season, a small and insignificant-looking stream meanders down this valley and passes under a bridge having an opening of over 1,000 feet. The roadbed was 8 or 10 feet above the bottom of the valley. Last year, the river rose 16 feet above the ordinary high-water mark, and, for six or eight hours, the whole valley was filled with a torrent that swept everything before it. When the water fell so that repairs could be made, no attempt was made to rebuild the embankment. The track was lowered to the natural surface of the valley so as to offer no obstruction to any future floods.

To protect the roadbed, a width of 50 feet on each side was carefully paved one foot below the natural surface. The earth was filled back, and the space planted with bushes. As the high water only lasts a few hours at a time, and the amount of traffic is small, such an expedient is allowable.

The cost of timber is so great that wooden trestles are out of the question. The station houses are all built of light, burned brick, plastered on the outside. The broad platforms are of stone or concrete filled in with earth and cinders.

SHOPS.

The main shops are at Tong-shan, and consist of shops for the repairing of cars and locomotives and for the construction of rolling stock. At present, about 500 men are employed at Tong-shan, but when the shops are run to their full capacity there are 900 names upon the pay rolls.

The company builds all of its passenger and freight cars, and also the tenders to locomotives. The sides and roofs of the cars are of Oregon pine, and the framing timbers are of teak. The underframing of both cars and tenders is of mild steel.

These shops are directed by Mr. Churchward, who has been in charge for eight years, and thoroughly understands the needs of the road.

The locomotives are all English and Scotch, with the exception of one American engine built by the Grant Locomotive Company. The engines are of the Mogul type. They are fitted with powerful steam brakes on the drivers. The greater part of the freight cars are open, with fixed sides about 4 feet high. There are a few box cars with steel frames covered with thin plates. All cars have two 4-wheel trucks. The truck frames are of iron, excellently designed and made by the company.

American cast-iron wheels have been tried, but did not give such satisfactory results as steel-tire wheels from Europe.

The passenger cars are of an inferior quality as regards comfort, but they are superior to the treatment they get from the natives. Every car has a brake at each end, worked by a screw. As yet, no continuous brakes are used, although two trains were once fitted out with the Westinghouse brake. Owing to some trouble, the directors failed to adopt the system.

There is one detail of the rolling stock that is American—all cars have the Janey coupler. It is a source of regret to the general manager that he can not manufacture this indispensable article, but must pay the American price for it.

WAGES.

Foreigners, of course, get much more than natives, but not more than the same class of men receive at home. Most of the engine drivers and machinists are natives, and they do good work. A common laborer gets \$4 (Mexican) per month; fireman, \$5 to \$6; engine driver, \$14 to \$45. At present, the two highest paid native drivers on the road get \$41 and \$46, respectively. An English driver can get, as maximum wages, \$200 (Mexican) per month; a section hand gets \$4; a foreman, \$6; a native clerk, \$80, if he can speak and write both English and Chinese.

All the work possible is piecework. The trains are run by the English staff system, and only one train is allowed in a block.

At present, all construction is at a standstill; nothing is being done except to keep the few trains necessary running. What the future policy will be as regards railroads no one can tell. Certain lines will eventually be built. The Chinese Government already sees the necessity of connecting Peking with the Yangtze Valley. Prejudices, lack of funds, internal dissension, and jealousies between viceroys are some of the factors that have to be dealt with before we can see on foot any organized system for the further construction of railroads. At present, the outlook is gloomy, but there are rifts in the political clouds, and, in time, the sun of prosperity and progress may break through.*

SHERIDAN P. READ,

TIENTSIN, *August 28, 1895.*

Consul.

*Thanks are due to the railway directors for their courtesy in placing at my disposal a special car for the inspection of the road; also, to C. W. Kinder, esq., engineer in chief of the Imperial Railway for valuable information, and to C. D. Jameson, esq., lately professor of engineering in the Iowa State University, for assistance upon technical points.

CHICAGO TRANSPORTATION COMMISSION IN CHINA.

The commission of world's transportation, Field Columbian Museum, of which Maj. J. G. Pangborn is president, arrived here on the 31st of August. I have shown this commission every official courtesy, securing for it a well-planned trip in a special car from Tientsin to Shan-Hai-Kuan and return. The commission is now en route to Peking. As considerable interest and curiosity was evinced as to the exact nature of the commission by the Tientsin public, I took occasion to publish its purport in our weekly paper, and inclose herewith a copy of my communication.

SHERIDAN P. READ,
Consul.

TIENTSIN, *September 7, 1895.*

[Extract from the Peking and Tientsin Times, September 7, 1895]

• WORLD'S TRANSPORTATION COMMISSION.

To the Editor of the Peking and Tientsin Times.

SIR: Maj. J. G. Pangborn, president of the commission, world's transportation, Field Columbian Museum, is now at Tientsin with the other members of the commission. This commission has excited considerable curiosity and speculation as to its exact nature. For the benefit of your readers, therefore, I wish to give you the following facts in regard to it:

Some time prior to the close of the World's Columbian Exposition in Chicago, a movement was inaugurated looking to the establishing of a lasting memorial, an institution which would fittingly perpetuate the achievements of 1893. Marshall Field, a well-known citizen of Chicago, contributed \$1,000,000, others followed his lead with lesser sums, and then Mr. Field announced his purpose to increase his gift to \$5,000,000. Mr. Pullman, the head of the Pullman Car Company, and associates likewise announced a willingness to increase their gifts, and something between \$7,000,000 and \$8,000,000 was assured.

The separate department of transportation exhibits at Chicago was an innovation in international expositions, and its unexampled showing of the evolution and development of the railways of the world, in which American and European railway companies participated, created an extended interest. With the founding of the Field Columbian Museum came the decision to constitute in connection with it the Museum of the World's Railway, the pioneer institution of its nature in the world. To the latter were contributed by far the major portion of the railway exhibits—all of the historical and considerable of the more modern—and the importance of the museum was at once recognized.

When the project of the founding of the railway museum was pending, and when the companies owning the larger exhibits were deliberating as to their final disposition, the organization of a commission to personally visit all countries, not only to secure such exhibits as to enhance the value of the collection as a whole, but to learn thus directly of development and practice and to insure relations with railway authorities and officials throughout the world, which would lead to personal interest and regular communication, and so place the institution upon a progressive basis, came to be regarded as an essential. This being decided upon, settled forthwith the question of the disposition of the exhibits, and they are now in the institution at Chicago.

The commission, as organized, left Chicago early in September last, and will be absent from the United States two and a half years, returning via South and Central America, the West Indies, and Mexico. It is a thoroughly practical body, each member having been chosen for his experience in, and aptitude for, the line of work he may be responsible for, the whole embracing all forms of transportation, the field and scope of the commission having been so enlarged, though, as a matter of course, the railway is the main study.

In the various colonies and countries so far visited every facility has been extended to secure a thorough comprehension of railway progress and practice, it having been everywhere recognized that with such cooperation the value of the labors of the commission and its reports would be greatly enhanced. The providing of reserved cars to insure the ready access to books, papers, and documents while en route, as well as to enable the handling of photographic apparatus, the making of rough sketches, drawings, and the like, has greatly advanced the opportunities for effective work, and the commission having at its disposal, as has been the rule in journeying over the various railway systems some well-informed official, the result has been the acquiring of details of inestimable worth.

From here the commission will enter Siberia at Vladivostock after having visited Korea. With the official sanction of the Russian Government, and accompanied by officials especially designated at St. Petersburg, the entire route of the Transiberian Railway system—completed, under construction, and surveyed—will be passed over.

The travels of the commission have been everywhere marked by the utmost consideration and courtesy, which I am pleased to state have been likewise extended to it here.

Your obedient servant,

SHERIDAN P. READ,
United States Consul.

TIENTSIN, September 5, 1895.

ASIATIC SHIPMENTS VIA SUEZ CANAL.

I have the honor to inform you that during the present week, the British steamship *Annandale*, of about 7,000 tons capacity, bound for New York via the Suez Canal, left the port of Hongkong laden with a cargo of Chinese and Japanese productions taken in at various ports of Japan and China, to nearly her full capacity, and will complete her cargo at Singapore at the extremely low rate of 25s. per ton of 40 cubic feet. Another British steamship of large tonnage, the *Nestor*, of the most extensive line of cargo steamships in the world, is now receiving general cargo at Hongkong for New York via the Suez Canal, at the same low rate of 25s. per ton of 40 cubic feet. As that price is equivalent to about \$6 (United States currency), it will be seen that the products of eastern Asia can be delivered in New York at less cost for transportation than is required for carrying freight across any one of the large States, and for about one-fourth of the price paid (\$26.00) from New York or any of the American Atlantic coast ports to Asia by overland railways to American ports on the Pacific, and by any of the several steamship lines to Japan and China. If any merchant, manufacturer, or shipper of American products or merchandise attempts to find cheap ocean freights from New York, Boston, Philadelphia, or Baltimore via the Suez Canal he will encounter difficulties which prevent shipments.

The sailing ships bring cargoes of kerosene oil to eastern Asia at a low rate, with the expectation of the shipowners that "return cargoes" can be obtained from China and Japan and other eastern countries at about the price at which the steamships are now taking "general cargo" from China and Japan to New York via the Suez Canal; and thus not only are American and other sailing ships certain to suffer from this new steamship rate between China and the United States via the Suez Canal, which shortens the time of transit from about four months via the Cape for sailing vessels, to about two months via the Suez Canal by steamships; but this new ocean freight-war must seriously affect all of the great steamship interests between China and American ports on the Pacific and the American transcontinental carrying trade.

The steamships coming from American Pacific ports to Japan and China have developed an important trade in American flour, which is sold before arrival, and is usually paid for within two days after reaching Asiatic ports. But while the States on the Pacific Coast enjoy the benefit of that traffic and communication, how is it with the States east of the Mississippi, as to participation in the benefits of direct and cheap water communication with eastern Asia via the Suez Canal for American products and merchandise, which are now restricted to the slow-sailing vessels via the Cape; or to shipment through European ports, where steamships are constantly receiving cargoes for Asia; or to the overland transportation system—all of which place American commerce at a disadvantage in competing for a share of the Asiatic markets in sales of American productions?

Besides the sailing vessels laden in Japan and China for the United States, there are between forty and fifty steamships annually laden with Chinese and Japanese productions for American Pacific ports, and about the same number of steamships (of about half the tonnage) similarly laden for New York via the Suez Canal; but there is scarcely an instance of any steamship coming to China or Japan with cargoes from American ports on the Atlantic. A considerable quantity of cargo goes from China and Japan to New York per British and German steamships, for transshipment at ports on the Mediterranean, in England, and Germany.

CHARLES SEYMOUR,

Consul.

CANTON, *September 7, 1895.*

POPULATION AND AREA OF JAPAN.

I inclose a translation appearing in the Japan Gazette of the 11th instant, of an article printed in one of the leading Japanese journals published in Tokyo, giving the population of the Empire of Japan in various past years, and an estimate of the present population and area, together with certain comparative statements. In my opinion these estimates are conservative and trustworthy.

By way of explanation, I would say that the unit of measure, used in making the statement of area—the “ri”—is the standard unit of lineal measure, equivalent with us to 2.44 miles.

N. W. McIVOR,
Consul-General.

KANAGAWA, *September 18, 1895.*

THE POPULATION AND AREA OF JAPAN.

[Extract from the Japan Gazette, Yokohama, September 11, 1895.]

The Asahi gives the following on the authority of a certain statistician :

Though it is recorded in history that the census of Japan was taken as early as 281, during the reign of Emperor Ojin, no figures then obtained remain on record. The following are, however, taken from authentic sources :

Year.	Reigning Sovereign.	Population.
610.....	Suiko.....	4,988,842
1733.....	Nakamikado.....	26,065,422
1732.....	do.....	26,921,816
1744.....	Sakuramachi.....	25,682,210
1756.....	Momozono.....	26,061,830
1815.....	Kokaku.....	25,621,957
1872.....	Present Emperor.....	33,110,825
1876.....	do.....	34,338,404
1880.....	do.....	35,929,060
1882.....	do.....	36,700,118
1885.....	do.....	37,868,987
1886.....	do.....	38,507,117
1888.....	do.....	39,607,234
1891.....	do.....	40,718,677
1892.....	do.....	41,089,940

Although the exact figures for 1893-94 are not known, it may be inferred from the rate of increase during the preceding two decades that the population of Japan at the end of the year 1894 could not have been much less than 42,000,000. As Formosa has been newly added to the Japanese territory by the treaty of peace, and more than 3,000,000 people in Formosa have in consequence become Japanese subjects, the present population of the country is probably more than 45,000,000.

The area of the new territory being 2,532 square ri, the total area of the country, which was before the war 24,794 square ri, is now 27,326 square ri. Japan, in the extent of her territory compared with European countries, stands now next to Spain, being about equal to Sweden. She is larger than Great Britain and Ireland by 6,933 square ri, and is the eleventh largest country in the world. Her population is greater than that of France by 6,600,000, but less than that of Germany by 4,416,000. Compared with Great Britain and Ireland, she has 7,100,000 more people. In population, therefore, Japan ranks as the fifth power in the world. In spite of this increase in population and in area, Japan stands as one of the poorest countries, considering the amount of her wealth and revenue, which do not reach one-tenth of those of Great Britain or France. This lamentable shortcoming accounts for the fact that she could not enjoy the full advantages of her victory over China.

VENEZUELA: COMMERCE, MANUFACTURES, ETC.

AMERICAN TRADE.

If any appreciable increase in the imports from the United States into Venezuela is perceptible, it is simply due to recent and better facilities for the distribution of merchandise, and is confined to such articles as heretofore imported—flour, lard, hams, kerosene, “blended” butter, lumber, some kinds of hardware, common glassware, etc.—but the essential feature of our trade—the general introduction of our manufactured goods—is still wanting.

The stereotyped complaints about the independence of our manufacturers at first impels the belief that they do not want this Latin-American trade, but I am beginning to doubt the sincerity and validity of this criticism, invariably advanced by foreign merchants having their chief houses in Europe and controlling nearly all branches of trade. If my suspicions are well founded, these statements are made to deceive the small native merchant and compel the purchase of such goods as it may be to the interest of the foreigner to further, which almost invariably means European. His present control of the market enables him to dictate both the place whence and the kind of goods he will import and sell, without regard to native taste, which, thus far, he has cultivated in one direction. Until some purely American houses are established in Venezuela, aided by a friendly native sympathy and sentiment, we can not hope to make great inroads in the sale of manufactured goods.

An important item of importation is fine table butter, which is now almost wholly supplied by Denmark, and costs, delivered at Hamburg, about 30 cents, put up in tin cans of one-half pound and upwards, hermetically sealed. I am convinced if some dairy near New York were to make an effort to secure part of this trade, it would prove successful and profitable. American butter as at present packed—with no view to its preservation in this climate—is justly in bad odor. To obtain the trade of an article of such universal consumption, is at least a good subject for investigation.

Until within three or four years comparatively little cutlery was imported from the United States. Since then some improvement is visible, and it is within the power of our manufacturers to increase their sales in this line.

The largest native dealer in cutlery and hardware showed me through his warehouse, explaining the needs of the trade and wherein Germans, English, and Americans excelled, and expressed an earnest desire to make closer connections with American manufacturers, and his willingness to send them samples of various goods, believing that when once thoroughly acquainted with Venezuelan trade our people could obtain a greater share than they have at present secured. This opinion I fully share.

In brief, we have made a beginning in the sale of knives, forks, hatchets, axes, hammers, and files (the latter preferred to all others), while crowbars, shovels, spades, hoes, scissors, etc., are almost exclusively purchased in

England and Germany, in addition to everything bought in the United States.

The machete, of which tens of thousands are sold annually, are all bought in England. The machete is simply a very large and broad knife slightly varying in size, but usually about 18 to 22 inches long and 2 to 3 inches broad, with which the Latin-American can not dispense, and which he applies to more uses than one can conceive.

VENEZUELAN MANUFACTURES.

Venezuela is solely an agricultural country. Its factories are few, often of the crudest kind and devoted to the manufacture of the most pressing native wants, such as sole leather, soap, candles, matches, cigarettes, rum, native shoes (*alpargatas*), hats, and sugar.

The manufacture of sole leather seems to have acquired an impetus and support, for which its large consumption and the high duty thereon seems responsible. Puerto Cabello supports two tanneries—one electric, the other employing the usual improved methods. The output of the latter is about 27,800 pounds per week, with the prospect of the plant being enlarged and the output increased. French and English machinery is employed. I am not aware of any tannery in the country manufacturing uppers. As Venezuela exports large quantities of goat and deer skins and hides, suitable for uppers, the suggestion is made that it might prove profitable if some large tannery of the United States would establish a branch in this country for this purpose, with American machinery and conducted on American principles. The duty on manufactured leather being \$4 per kilogram (2.2 pounds), and on the unmanufactured 50 cents per kilogram, the poor people are practically debarred from its general use and confine themselves, for ordinary wear, to the native *alpargata*, a modified scriptural sandal composed of a solid piece of sole leather, shaped for the foot, with a woven cotton upper, having an outlet for the big toe, a piece of similar material secured to the leather heel, and then passed over and fastened to the upper part of the heel of the foot.

The importation of sugar being prohibited, all large cane plantations have their sugar mills, with more or less advanced processes for placing the product on the market, but no refinery exists in Venezuela, and all sugar sold ranges from a very dark to a light brown.

Soap is made from native cocoanut oil, and candles from stearin imported from Europe. Both industries are not only among the most profitable, but also of the greatest magnitude in Venezuela, the high duty giving them a monopoly in the common grade of these articles. Fancy and fine perfumed soap is not manufactured.

Rum and cigarettes are made from native products. Tobacco of excellent quality is grown and employed in the manufacture of the latter, together with considerable Cuban tobacco. Both industries seem to have reached a profitable base.

The *alpargata* (shoe) is manufactured or rather put together by numerous small factories, the woven cotton being usually purchased from the large factory in Valencia, which makes a specialty of this article.

TARIFF.

The tariff of the country is divided into nine classes. Duty is charged on the gross weight. A package of merchandise containing any article belonging to a higher class pays duty on the whole as of that class.

BANKING FACILITIES.

The want of banking facilities is often keenly felt. The two banks of Caracas and that of Maracaibo are the only institutions of the kind in the country, and with agencies limited as to the places and transactions, have, under prudent management, proven very profitable and beneficial to the business interests of the country. The want of such institutions in agricultural districts is generally recognized and deplored, and I can suggest no more profitable undertaking than one of this character, based on large capital and commercial standing. Large planters often require ready money to carry on their operations, and are compelled to resort either to the large merchant or usurer. In either case, he pays a rate of interest seldom less than 12 per cent, and not unusually 18 per cent per annum. If he deals with the former, he may be expected to purchase his supplies from him, paying a large profit on the sale. The planter's paper and collateral are unquestioned.

Often strangers with the best bills of credit, find themselves remote from these legitimate institutions, and are forced to submit to such a rate of exchange as the merchant may exact.

Attempts have, at various times, been made to obtain banking concessions, but always accompanied with such conditions as to make their denial necessary and imperative.

American capital invested in banks would be as safe and secure as at home. An American bank and American business houses are the only factors that will loosen the grip of European exporters.

FINANCE AND CURRENCY.

All values in this country are based on gold—gold of all nations being current as a commodity. Silver of other countries is forbidden circulation, but that of Venezuela is on a parity with its gold and is accepted in payment of all dues, public and private, without loss. This is due to the fact that, at present, no silver is coined and never has been, in excess of the Government's ability to redeem it in gold. It is generally understood that were this limit of ability passed, the same conditions would exist here that prevail in all other South American republics, namely, silver would be at a large discount, and the poorer classes would suffer in the payment of their dues. Venezuela is, therefore, proud of the standing its silver coin has among the nations of the world.

The last Congress prohibited the emission of paper money by the Government. The paper money in circulation is that of the banks at Caracas and Maracaibo, the only institutions authorized to issue paper money. For this money, the Government is in no wise responsible, its acceptance not being compulsory, and it circulates only on the credit and integrity of the banks and in their own vicinity. Its issue is very limited.

INLAND TRANSPORTATION.

Until some few years ago, Venezuela was without a railroad. Now, not only are the ports of La Guayra and Puerto Cabello connected with Caracas by rail, but Barquisimeto and other places, with the coast in like manner, while many railroad "concessions" for the development of the remote interior seem to have acquired new life. If any of the many rumors are to be believed, Venezuela must soon enter upon a rapid development of its best, but heretofore neglected, territory.

San Felipe will, at an early day, be connected with Puerto Cabello by a line of small steamers and a substantial "tramway," affording unprecedented facilities for exporting the products of that section of the country and distributing the imports, with a certainty, safety, and rapidity heretofore unattained.

The Yaracuy Navigation Company, chartered in the State of New Jersey, with its main business office in the city of New York, has secured control of a Venezuelan concession to colonize and navigate the Yaracuy River, a waterway running through one of the richest forest, coffee, cocoa, and copper districts in the Republic. The mouth of the river is 12 miles from this port, and will be navigated for a distance of about 30 miles and then connected with San Felipe (the storehouse and distributing point of that district) by a substantial tramway of about 25 miles. Being the only distinctive American enterprise in this district, other than the electric plant, I am happy to report that I believe this is an actuality and not a syndicate myth. The company now has three small steamers, with apparatus, at work clearing the river of obstructions. It is backed by well-known New York capitalists.

MINERALS AND WOODS.

Tradition is that many rich gold and silver mines, worked both by the old Indians and Spaniards, exist in this consular district, not over 50 miles from Puerto Cabello. Fine and valuable specimens of both metals are constantly found, but no systematic efforts have heretofore been made to explore the country. Within the past three months, some of the American capitalists connected with the Yaracuy Navigation Company have sent out a number of New York mining engineers, who are at present prospecting the country. As they have not yet returned and no reports have been received, I am unable at this time to inform the Department what success, if any, has attended their search.

This section of the country is noted for its productive copper mines. The Quebrada Company (English) operating those at Aroa have recently shut down mines and smelter owing to the great depression in the copper market. The quality of the ore produced is equaled by few mines in the world.

The Quebrada Railroad, built by the same company, for the purpose of transporting their product to the coast is still in operation, in conjunction with its leased lines—the Great South Western Railroad—connecting the large town of Barquisimeto with the coast of Tucacas (105 miles of road in all).

Phosphates, almost pure, are found near the coast, not far from this port, and only awaits a higher market and capital to develop.

The forests throughout the interior in this consular district consist mainly of hard, fancy cabinet woods, such as mahogany, ebony, *lignum-vitæ*, cedar, green heart, etc., and will no doubt soon become an important item of export, in consequence of the operations of the Yaracuy Navigation Company.

PUERTO CABELLO.

The population of Puerto Cabello is now about 12,000, but as this is the largest port of entry in the country, next to La Guayra, the magnitude of its business can not be measured by its population. On the other hand, it is one of the most metropolitan towns in the country and is an attractive place, comparatively speaking, containing four pretty parks and a theater, excellent water and waterworks, clean streets for a place without sewerage, pleasant dwellings, and handsome storehouses. Tracks are now being laid for a street tramway, with the object of transporting freight only from the warehouses of the merchants to the wharf, and not intended for passenger service.

The heat here is greatly tempered by the pleasant sea breezes that prevail during the day and evenings and the mountain breezes at night, making the mornings and nights pleasant as a general thing throughout the year.

Puerto Cabello has the reputation of being an unhealthy place, and is so indicated in all encyclopedias. This possibly originated in an epidemic of yellow fever confined to some ships in the harbor about the year 1876, during which most of the ships lost nearly all their crews. The fever did not, however, spread to the town, and was brought here by these ships. Since then no epidemic or even an approach to one has appeared, either in town or harbor, and the uncorrected statement does gross injustice to the town. My own residence here enables me to contradict this generally accepted foreign opinion.

COST OF LIVING, WAGES, ETC.

The poorer classes of Venezuelans live mainly on fish and fruits. The few articles of manufactured goods used by them are confined to the most pressing wants and of the commonest grades.

Rent is exceedingly high. An ordinary pleasant dwelling costs from \$60 to \$80 per month, and what is termed a handsome house rents for from \$100 to \$120 per month. A house renting for \$30 per month would be located in an undesirable, often in an unenviable, quarter of the town, and shabby both in exterior and interior appearance. The luxury our poor enjoy in the way of small, neat, and cheap houses or apartments, is unknown in this country.

Table board with which a foreigner must be content, and to which the better-class native is accustomed, cost \$35 (United States gold) per month. Flour that sells for \$2.50 and \$3 per barrel at home costs \$10 to \$11 gold at the ports and often twice as much and more in the interior towns. Eggs are 40 to 60 cents per dozen; potatoes, 8 cents per pound; meat, 15 to 30 cents per pound; sugar, 16 to 20 cents per pound, and all other imported and native products in proportion.

Though this is an agricultural country, the native seems devoted to raising coffee, cocoa, and like products to the almost total neglect of good vegetables. Hence, we often see the peculiar spectacle of imported vegetables in a country that could with proper management export them.

Incandescent light is furnished at very cheap rates.

SAMUEL PROSKAUER,

Consul.

PUERTO CABELLO, *September, 1895.*

NEW AGRICULTURAL LAW IN HONDURAS.

Citizens of the United States thinking of colonizing in Honduras for agricultural purposes (and, judging by the number of inquiries received at this office the number of such persons would seem to be increasing), will be interested in the new agricultural law of the Republic. The Congress, during its last session, passed a law under which the Government proposes to cede to individuals desiring to engage in the cultivation of the products of the soil portions of the public lands proportionate to their respective enterprises. Persons obtaining land under this law are obliged to begin work upon it within six months from the time of the grant, and they must have in cultivation each year at least a third part of the land ceded. Because of the difficulty of preparing the land for cultivation and the scarcity of labor, parties intending to engage in planting on a considerable scale would not, perhaps, find it to their advantage to take grants under this law. It would be better for them to buy lands of individuals or denounce public lands under the terms of the general land law. Under the present law, lands can be obtained from the Government at a cost of from a half peso to 2 pesos (1 peso=48.6 cents in United States currency) per manzana (about 1¾ acres) and certain costs of surveying.

Two articles of the new agricultural law are worthy of note:

(1) Agriculturists are exempt from military service, and also from paying fiscal or municipal duties on machinery and agricultural tools, materials for the construction of houses and fences, animals for breeding purposes, seed, forage, and fertilizers that they may introduce into the country for use in their agricultural enterprises.

(2) Coffee is declared to be free of all export duty, fiscal and municipal, for the term of ten years.

The fact that such an export duty exists in the other Central American republics, and the fact that a very inconsiderable part of the lands of Honduras suitable to the cultivation of coffee (and much of it is considered equal to that of any part of Central America) have been taken up, is reason for expecting that the interest in coffee growing in the country will be very much increased in the next few years.

An English translation of the general land law of the Republic now in force appears in the Handbook of Honduras, published by the Bureau of American Republics, Washington, D. C. This law, however, will, it is said, be revised in some respects by the Congress which meets at the beginning of next year.

WM. M. LITTLE,
Consul.

TEGUCIGALPA, *November 9, 1895.*

AFRICAN AND ARABIAN COFFEE.

As will be seen from the annexed statement, coffee is the principal article of export from Aden to the United States. There are two countries that furnish this coffee—Abyssinia, in Africa, and the province of Yemen, in Arabia. The Abyssinian coffee is brought from that country by camels through Somali Land, and from thence by boats to this place. From the reports the natives bring from that country, it would seem that all the coffee brought from Abyssinia grows wild, yet the grains are as large as, if not larger, than the cultivated coffee of Arabia, and its flavor is excellent. With the soil of that country producing such magnificent coffee without cultivation, we may naturally expect the natives will soon turn their attention to the proper cultivation of this plant, when remarkable results may be expected.

The province of Yemen, in Arabia, is the natural home of the coffee plant, as it was here its use was first made, and from that day until the present the coffee of Yemen has been in greater demand than that of any other country, for of all the different kinds produced the far-famed mocha is considered the best. Because of the fact that no travelers are allowed in the interior of the country, no information of the cultivation of this plant can be obtained, except from the Arab caravans that bring the coffee to market, and these reports are not very reliable. But, unlike the Abyssinian coffee, all the Arabian coffee is cultivated.

The greater portion of the coffee brought to this place is in the pod. The pod is removed by passing the coffee between two revolving stones, thus breaking, or crushing rather, the shells. Women are then employed to clean and sort the coffee, the best of which is exported, the inferior grains and the pods being sold to and used by the Arabs for their own use. A bag of coffee for export weighs 160 pounds, and the average cost price, put down in the port of New York, is about 25 cents per pound.

Value of exports from the consular district of Aden, Arabia, to the United States during the year ending June 30, 1895.

Articles.	Quarter ending—				Total for year.
	September 30.	December 31.	March 31.	June 30.	
Coffee.....	\$52,938.43	\$202,933.40	\$365,405.88	\$188,929.15	\$810,206.86
Civet.....		1,617.45	2,043.30		3,660.75
Fibers.....				173.60	173.60
Gum arabic.....	177.07	197.25	230.02		604.34
Hides.....			562.00		562.00
Skins.....	109,301.27	165,107.21	213,731.67	143,655.35	631,795.50
Shells:					
Mother-of-pearl.....		12,107.73	271.00	901.58	13,280.31
Tortoise.....		1,131.87		1,219.54	2,351.41
Sundries (Somali-Land curios).....			432.00		432.00
Total.....	162,416.77	383,094.91	582,675.87	334,879.22	1,463,066.77

WM. W. MASTERSON,

Consul.

ADEN, August 19, 1895.

NOTES.

Commercial Union of Saxony.—Consul Monaghan, Chemnitz, November 1, 1895, reports as follows:

The tenth annual report of the Commercial Union of Saxony tells a tale of ten years' hard, well-done work. In the short space of ten years, it has won a world-wide fame. It was given prizes, unsought, at the Australian Exposition, in 1888-89 and in Chicago in 1893. These were given for its publications. Besides, its president was made a member of the Chicago Exposition general committee. The aid and counsel of the union is sought from all sides and by all kinds of people. Many times, its committee has acted as a court, or board of arbitration, in commercial quarrels and in deciding knotty questions; it has aided often and very materially to get foreign firms to pay large and long outstanding debts hitherto held to be hopeless. Its bureau of information, one of the best organized in the Empire, is always busy. It has had great success in finding out foreign swindlers and in scenting out industrial agents who come here to collect and carry away the secrets of Saxony's commercial success. Its sample rooms have been enlarged and improved. These have been visited by business men from all parts of the world; they have more than equaled the expectations of their projectors. The society has sent out seven traveling commissions to investigate trade chances in Canada, Mexico, the West Indies, South America, eastern Asia, and South and East Africa, paying therefor 300,000 marks—all this to aid exports. It sent out 110,000 German and English catalogues; circulars in five languages; 48,000 reference books in five languages, calling attention to the industries of Saxony and Thuringia; 70 beautifully illustrated business albums, containing illustrations and references to Saxony's most important houses; and 150,000 other important articles, references, and notices. Since 1885, 8,000 merchants have seen the sample rooms. In the ten years, answers have been given regarding the standing of foreign firms 9,000 times. Sample orders to the number of 13,000, covering 7,000,000 marks, were sent out; these secured business covering 30,000,000 more. The membership was 476 at the end of the fiscal year; 28 firms have joined since. The finances of the society are based on the annual membership fees. The officers, except the secretary, all give their services free. The union has 46 principal agencies in Europe and 53 beyond seas. This year's catalogue is to consist of 15,000 copies, and is to be sent to all parts of the world. Every effort is being made, every energy is being employed, to extend the union's usefulness. It is not necessary to say success is certain; in some cases it has been simply phenomenal. A beehive best illustrates this land. Its 3,500,000 people are pouring out into the world's markets almost every kind of article known. England, alarmed at its energies and encroachments in markets once monopolized by Manchester, Nottingham, and London, is looking into its methods. From \$30,000,000 to \$40,000,000 measures its exports to us. All over the Kingdom, such unions as the one referred to above are working to win away from France, England, and the United States part, if not all, of the foreign trade. Their work can not be commended too highly.

German Emigrants as Trade Agents.—Consul Monaghan, Chemnitz, November 1, 1895, reports:

A new law looking to the correction of abuses and to furthering Germany's interests in future emigration movements is making many friends inside and outside official circles. An

effort is to be made to make the conscienceless agencies impossible by erecting agencies under State control, these to give emigrants or persons intending to emigrate all the necessary information regarding the land in which they intend to settle. To aid these State-established agencies, others are to be opened in foreign lands. These latter are to furnish the home agencies with facts and figures and information as to the best ways and means to be employed to aid intending immigrants before leaving and after arriving. In fact, they are to actively aid them. They are to be placed under the control of German consuls in foreign parts. They are to find out what parts of the foreign land offers the best prospects, and they are to report such information to the home offices; they are to protect immigrants from the impositions and frauds so common in countries receiving large numbers of immigrants. Of course, the system presupposes a central office with branches all over the Empire; these are to be connected with the local imperial council boards. The hope is expressed that such a system may succeed in leading very large numbers in directions best suited to secure favorable and permanent connection for and with the Fatherland. Of course it will cost a great deal to construct and carry on such agencies, but their builders look for large returns. It is hoped that they will aid the German element to unite its parts more easily and thus play an important part in assisting German trade. Such an element so aided would, out of gratitude, turn to the Fatherland for all its needed supplies. Agents of home houses would find their paths pleasanter and their tasks lighter in lands where Germans, through union and cooperation, could aid them. Such immigrants will be little less useful to the Fatherland than colonists. In many ways they will be worth more, for, coming or going into well-settled countries, they will be able to point out to the people at home how best to supply the wants of those among whom they toil. It is not only necessary to know what is wanted, but what forms are best suited to local tastes. In this way, henceforth, German emigration is to aid directly and indirectly the home trade. The moral and political importance of such a system goes beyond all calculation—it certainly enters into the plan as a very important feature. Nor are its projectors unconscious of the fact that thus millions of Germans and their descendants may be made to aid in extending the Empire's influence and in opening up new avenues for its rapidly growing foreign commerce. It needs no prophet's eye to see success crowning efforts of this kind. The Germans in China, Japan, Australia, and North and South America act as advance agents of their kindred at home. The progress of the last twenty-five years is simply phenomenal. Nor does its rapidity of movement seem to decrease. Energies seemingly inexhaustible, activities believed to be the heritage of other races rather than the Germans, enterprise, a desire to please, a willingness to learn, an eager, earnest effort to give satisfaction, are some of the factors that have made, are making, and seem destined to make Germany second to none of the commercial countries, certainly of Europe.

New Roofing.—Consul Monaghan, under date of October 20, 1895, transmits the following information relative to a new roofing:

A man named Köhler, living in Limbach, Saxony, has recently invented a cheap, durable, beautiful roof. It consists of cement and gravel, is as durable as slate and very much cheaper; looks as well as or better than slate, and can be made much easier and put on quicker. In a country like the United States where wooden shingles are almost universally used, increasing very much the danger from fire, this roof will soon win its way to favor. This roofing consists of one part cement and three parts sand. These are mixed to a mortar-like consistency, through the addition of clean water, after which the mass is pressed in a mold. Boys can mix and press the mass. Leaving out its fireproof qualities, it otherwise fills every requirement of a good roof; is durable, being proof against all kinds of weather; it is light—may be made as light or heavy almost as one may wish—it can be given all the

colors of natural slates or any other desired shade. A square yard weighs 76 pounds, but, as said before, it may be made lighter or heavier.

Two houses in Germany have turned out from 10,000,000 to 20,000,000 of the "plates" in the last few years, simply because it beats all other kinds of roofing. This distinction is due to certain ridgings that run around the inside of the plate, and permit of one so lying on and into the ridges of another as to preclude the possibility of wind or water working their way inside. Nothing, whatever, is needed for the Köhler roof except nails for the plates. Paint and plaster play no part whatever. Plates may be made of pressed glass in exactly the same form and fitted to roofs, thus avoiding the cost of building in windows. These plates are diamond shape. It has been patented in most civilized countries.

The cost of both material and machines is very cheap. The machine, with 300 full-size and 100 half-size molds, costs less than \$500; the press costs \$200; each mold, full size, 50 cents; half size, 35 cents. Of course, the cost of each square yard will depend upon the prices paid for sand and cement. Press and material may be transported to the place of building and the plates may be made there, thus avoiding breakage, though well-made plates are as hard as bricks and not more liable to loss from breakage.

I write about this particular cement roof because I believe it is bound to revolutionize roofing all over the world, and because it came under my personal observation here in Chemnitz

American vs. Italian Shoes in Germany.—Consul Stephan, under date of Annaberg, October 16, 1895, transmits the following translation from a recent report of the directors of the Berlin Board of Trade:

A very keen competition is growing up in the shoe trade, partly owing to the fact that the producers are endeavoring to dispense with retail dealers, and partly from the appearance of foreign competitors, not only on the Berlin market, but on the German market generally. There is really nothing unusual in the former circumstance; in France, especially in the shoe trade, this kind of business, which excludes retailers, has become very extensive. The second fact has reference chiefly to the competition of Italian and American shoes, which have lately made their appearance. These foreign firms, which establish their stores in various towns of Germany, seek to simplify their production by manufacturing goods at one price only and selling them directly to the public. In France, a pair of shoes was at first sold for 12.50 francs; this was soon followed by another quality at 10.50 francs, and it can not be denied that the manufacturers really do their utmost to supply the best goods which can be made for the price. With these foreign firms the native manufacturer can not, as a rule, compete, because they are obliged to produce hundreds of varieties and not a single staple article only. However, such one-price factories are beginning to appear here and there in Germany also, which sell their goods in a large number of stores directly to the public, and, therefore, independently of dealers.

The two stores of an Italian shoe factory, erected in 1894, are prospering, according to all appearance, whereas it is stated that the store of this factory in Hamburg is not doing a good business, because the lightly made Italian shoe is not adapted for countries where there are frequent heavy rains. An association of American makers in Boston has also established a store in Berlin for ladies', gentlemen's, girls', and boys' shoes, which, according to the opinion of competent judges, has a good prospect of success.

As a new and independent industry, the manufacture of fancy shoes is to be regarded. The number of factories engaged in this manufacture and erected in 1894 is quite large. This is specially important, as the import of Austrian, particularly Vienna, goods is thereby more and more reduced. Until lately, Vienna goods entirely commanded the German market in this direction. However, this will not yet remove the general competition of Austria.

factories, which, like those in Italy, have the benefit of lower wages; whereas the American production enjoys the advantage of better division of labor and cheap material.

American Goods in Germany.—Consul Monaghan, of Chemnitz, says:

Hardly a mail comes to Chemnitz that does not carry along with it a letter or letters asking consuls to find markets for goods made in the United States. Germans are not eager to get our goods; they are, however, very eager to sell to us. I suppose there is no better way of pointing out to our people what might be done than by urging them to do as the Germans do. Twice in each year, this city has in it from fifty to seventy-five buyers, representing American houses. What is true of Chemnitz, is true also of Leipsic, Gera, Glauchau, Plauen, Anna-berg, etc. These men leave orders in Saxony for sums ranging, in the aggregate, annually from \$25,000,000 to \$30,000,000 or \$40,000,000. No sooner, however, do the buyers get away than many of the agents of the manufacturers here pack their trunks, especially those who have not yet established agencies on the other side, and sail for the United States where they cover the country from New York to San Francisco, and from Portland, Me., to New Orleans, showing samples and taking orders. This energy and eagerness are bearing fruit. Success to the Saxons has been so certain that they build on bigger sales and better times than they have ever had. There is only one way for our merchants to win or make way among them, and that is by doing as they do—send out agents with goods. One American manufacturer has tried this and demonstrated its wisdom. He was at this office last week seeking aid to get over a certain legal technicality regarding an “itinerant merchant.” He had covered the country from Berlin, had had very successful and numerous sales, and was very eager to go on. He had, however, one expensive drawback; he had to take an interpreter along. Of course, this ran up his bill of expenses away beyond what it would otherwise have been; besides, no man desires, if he can help it, to sell his goods by means of an interpreter. The success of this single effort convinces me of what I have all along believed—that the best way to sell goods is to go out and sell them.

Nicaraguan Duties.—Consul O'Hara, of San Juan del Norte, under date of November 15, 1895, reports the visit to that place of Señor Santiago Callejas, Minister of Finance, who was designated by the President to make a tour of inspection throughout the districts of Siquia and Cape Gracias and the department of Zelaya, and to make a report thereof, and says his report will be published when completed. The consul transmits the following clipping from the Bluefields Recorder, headed “Result of the Ministerial Visit.”

The visit of His Excellency, the Minister of Finance, has taken concrete form in two edicts recently promulgated regulating the import and export duties to be levied for the general uses of the Government from the 1st of January next, and prescribing a uniform means for collecting these dues in the only ports of entry established by this edict, viz, Bluefields, San Juan del Norte, and Cape Gracias á Dios, Bluefields being the central port, to which the others above mentioned are, as it were, affiliated for commercial purposes.

This edict (article 2) puts into execution on the Atlantic coast the customs ordinance in vigor in all the other coast ports of the Republic, as well as such amendments thereto not contrary to the present edict.

The import duty on goods and merchandise is fixed at 20 per cent silver on the principal value in gold of the invoices, calculated on the gross weight of the merchandise in conformity

with the scheme of appraisement mentioned in the tariff of the 25th of July, 1888, and its amendments. And as said appraisement is calculated as being 50 per cent of the value of each pound weight of the merchandise, it should be doubled so as to obtain the exact value.

Imported spirits, pending the establishment of centers of distillation, shall pay duty at the rate of \$1 per liter of 50° C, liquors of higher alcoholic test paying 2 cents for each degree over and above 50°. Cordials and liqueurs will pay 2 cents per centiliter of alcohol contained in each liter; beverages (such as wines, malt, etc.) 20 per cent on the value calculated on the weight as aforesaid.

Article 5 imposes the following duties: Tobacco, all kinds, 50 cents per pound; manufactured, 75 cents per pound. Flour, per quintal, 50 cents. These duties are to be levied per pound weight packages excluded.

Merchandise imported from San Juan del Norte are subject to import dues and should be accompanied by a manifest, else said merchandise will be considered as contraband.

Article 10, enacts that goods destined to the district of Siquia to Rio Grande, Prinzapolka, Wawa and Corn Islands shall be liquidated at the Bluff and the duties paid to the receiver-general in this town.

Article 13 abolishes consular invoices. This will be appreciated in commercial circles, as this formality is not only expensive but is a formidable obstacle in the way of trade. Lumber, rough, planed, or otherwise, is on the free list.

The export edict is, in our opinion, more favorable to our commerce than the one relative to imports. It decrees that from and after the 1st of January next no other but the following export duties shall be levied in the department of Zelaya and the districts of Siquia and Cape Gracias, viz: (1) Three cents per bunch of bananas exported in the months of March, April, May, and June, and 2 cents per bunch exported during the other months; (2) gold dust, per ounce; tortoise shell per pound, and cocoanuts per thousand, \$1; (3) coffee, per quintal, \$2; (4) India rubber, 4 cents per pound; (5) tuno, half a cent per pound; (6) turtle, 50 cents each.

American Sugar Interests in Cuba.—Under date of December 2, 1895, Vice-Consul Casanova, of Cienfuegos, in a report concerning the sugar industry and the American interests therein, says that the prevention of sugar making is the most settled policy of the insurgents, and that cases of partial burning of plantations in that district, some of them owned by Americans, had already occurred. The sugar-factory interests in the Cienfuegos district owned by American residents or corporate companies are very valuable, producing over 600,000 bags (86,000 tons) per annum, which represent an annual value of over \$4,600,000, even at present low prices. There are, besides these, large American interests invested in the cultivation of cane for supplying the sugar factories. The effect of the present business depression and the impoverishment of the country, brought about by the crop difficulties, manifests itself in the lessened importation of goods, the decreased consumption affecting trade to a very great degree.

A New Mineral.—Under date of November 6, Consul-General Jones, Rome, reports:

Professor Lovisato, of the University of Sassari, island of Sardinia, has recently published an important report on senarmontite (oxide of monometric antimony) and on the minerals as-

sociated with it in the mine of Nieddoris, Sardinia. Senarmontite is not only a new mineral for Sardinia, but for Italy also.

Senarmontite, while very rare at Nieddoris, presents itself in groups of regular octahedral crystals, between the transparent and the translucent, colorless or slightly whitish, or else in isolated octahedral crystals, but always contingent on quartz, which is the principal gangue of these veins. Valentinite (oxide of orthometric antimony) is more frequently met with at Nieddoris than is senarmontite.

Swiss National Exposition.—Under date of Geneva, November 19, 1895, Consul Benjamin H. Ridgely reports as follows:

I have no doubt it would be gratifying to the Swiss Government, as I personally know it would be to the city and Canton of Geneva, if a brief outline of the range and scope of the approaching Swiss National Exposition were to be given a place in our monthly journal, *CONSULAR REPORTS*. As I have previously reported to the Department of State, this exposition will be inaugurated at Geneva on the 1st of May, 1896, and will terminate on the 15th of October.

The Swiss Confederation having made an appropriation, and the various cities and cantons having contributed liberally to a popular subscription, there has been no lack of funds, and the directors of the national enterprise have erected fine buildings and prepared spacious and ornamental grounds which are now rapidly approaching a state of completion. The exhibition promises to represent all that is best in the art, science, industry, machinery, electricity, and agriculture of Switzerland. All the principal manufacturers in the country have taken space, and are sparing neither pains nor expense to make the general display interesting and in all respects worthy of our sister Republic.

In the machinery and electrical department there are to be some unique and surprising features. The electrical exhibit, indeed, will probably form the most important collection of ingenious electrical appliances ever seen in Europe.

The fine arts section is in two departments, ancient and modern, and contains displays of paintings, sculpture, scientific instruments, instruments of precision, watches, clocks, and goldsmiths' and silversmiths' work. The Palace of Fine Arts is unique in design and embodies the spirit of Swiss architecture.

In the machinery, electrical, and science departments some of the exhibitors have taken space, but have not declared the full nature of the exhibits. There will be a traveling foot-path operated by electricity which will traverse the whole length of the great machinery hall. It may here be pointed out that a force equal to 12,000 horsepower is at the disposal of the exhibition authorities. This power is derived from the River Rhône, and duplicates of the far-famed and wonderful turbines and other water-power motors of the Rhône, the inventions of Mr. Théodore Turrettini, the mayor of the city, will have an important place. Horseless cabs, driven by electricity; a multiplying-valve pump and appliances for aerial navigation will be shown, together with all processes (with machines at work) employed in the production of paper, silk, cotton goods, etc.

In a special annex, Prof. Raoul Pictet, one of the greatest of continental chemical scientists, will display his inventions for the production and use of cold. A temperature of minus 415° is obtained. The principal uses to which this has at present been put are, the purification of perfumes and chemicals, the cure of dyspepsia by a sort of cold turkish-bath process, disinfecting by "Liquid Pictet," and the production of an illuminating gas which gives a light eighty times stronger than ordinary coal gas. This promises to be a display that will interest the scientists, chemists, and physicians of all the world.

Methods of applying electricity for testing strengths and qualities of all metals and materials will be shown by one of the principal Swiss scientists. Educational appliances and teaching methods will be prominent, and explanations will be made by competent professors.

A real village is being built with a church, brasseries, and ancient *chalets*. In this interesting section examples of all styles of Swiss architecture will be found; the *chalets* will be inhabited by peasants in their picturesque cantonal costumes and engaged in those minor industries for which the peasants of the country are famous.

In the Pleasure Park is an aquarium, in which the visitors will descend beneath the water to view the fish. A model hotel, complete with every modern appliance, will be an interesting and practical feature, as will also the railway of the Himalayas, whereby travelers ascend a great tower by means of a car running upon a cable—something similar to a life-saving apparatus used for shipwrecks.

Swiss living in the United States are competent to exhibit, and the president, Mr. Théodore Turretini, is anxious that they should be represented.

President Turretini, by the way, is the most distinguished of European electrical engineers and inventors, and is taking great interest in that feature of the exposition. When the American company for the utilization of the force of Niagara Falls was organized, Mr. Turretini was offered the position of chief engineer, but declined it. Under his direction, the force of the River Rhône at Geneva has been so effectively utilized that 13,000 horsepower is obtained from a distance of 6 miles. He hopes that American engineers will come here during the exposition, that they may see what has been done in this direction.

Cardiff Exhibition.—Vice-Consul Harris, under date of November 7, reports :

During the spring and summer of 1896, it is intended to hold in Cardiff an exhibition possessing unique features. The Queen has consented to become patron, and Lord Windsor is president. Lord Windsor is the Lord Lieutenant of the county of Glamorgan and mayor of Cardiff. The project has been warmly taken up by the leading people of the county, and among the many influential supporters of the scheme are the Marquis of Bute, K. T., the Earl of Dunraven, Lord Tredegar, Lord Wimbourne, the members of Parliament for the various divisions of the county, and many others. Cardiff is the recognized center of a flourishing industrial district, the population within a radius of about 50 miles numbering over 1,000,000. As a port, Cardiff stands at the head of the United Kingdom in the matter of cargoes shipped to foreign ports, the tonnage of vessels cleared from Cardiff for the year 1894 being over 1,000,000 tons in excess of that of the second port (London), the tonnage cleared for foreign ports at Cardiff for that year being 6,319,267 tons.

The object of the exhibition is to illustrate the most recent progress in science, arts, and manufactures, and these have been divided into various sections, among which are sections devoted to mines and mining appliances, machinery, electricity and local and general industries, maritime, agriculture and horticulture, fine arts, etc.

The Marquis of Bute has placed at the disposal of the promoters the Cathays Park. This park has an area of about 50 acres and has been pronounced by experts to be one of the finest, if not the finest, site in the United Kingdom for the purposes of an exhibition. It is perfectly level, well drained, is situated in the center of the town, and is within easy access from all railway stations.

The controlling body—the executive council—consists of the most prominent business men in Cardiff, among whom are Messrs. Robert Forrest (chairman), S. A. Brain (vice-chairman), Lascelles Carr, T. Hurry Riches, J. H. Hallet, Edmund Handcock, jr., and others. The various sections are under the control of men possessing special knowledge and aptitude for the work, and among the members are Sir William Thomas Lewis, Mr. T. Foster Brown, Mr. I. Treharne Rees, Capt. Hamilton Murrel, Captain Pomeroy, and Mr. C. D. Phillips. The executive council have been fortunate in securing the services of Sir Somers Vane, F. R. G. S., assistant secretary to the Imperial Institute, London, as consultative adviser.

It is intended to open the exhibition on the 1st day of May, 1896, and to continue it for a period of six months, and it is hoped that the Prince of Wales will visit Cardiff to perform the opening ceremony.

A start has been made on the buildings, which will be ready early in the new year. Upwards of 100,000 square feet of floor space will be provided for exhibits, and the buildings are so arranged as to meet any unlooked-for demand for space. Numerous applications for places have already been received from the leading firms in the Kingdom.

A prominent feature of interest in the exhibition will be a representation of old Cardiff business premises, and the old town hall, which has long since been demolished, will be reproduced.

The mining section will be a prominent one. In connection with this section, it is proposed to erect a model coal mine, with all the necessary appliances, and Cardiff being in the midst of the largest steam-coal producing area in the world, this must prove a great attraction. In fact, each of the sections is striving to make its own particular section as complete as possible.

Popular amusements and novel entertainments will be provided in the exhibition grounds, and chief among these will be a water show on a very large scale. It is intended to construct a lake of an area of about 16,000 square feet, and on this lake will be given daily a representation of a naval engagement. An old Welsh fair, an Indian bazaar and theater, a street of all nations, a menagerie, a switchback railway, captive balloons, and a cycle track are among other features it is intended to provide.

Smaller exhibitions have been held in Cardiff in past years, but the present one will be by far the largest ever held in Wales.

Mr. Walker Cook is the honorable secretary of the exhibition, and the offices are at No. 98 St. Mary street, Cardiff.

Barcelona Fine-Art Exposition.—Consul-General Bowen, November 8, 1895, reports to the Department at the request of the mayor of Barcelona, that the third General Exposition of Fine Arts and Industrial Art will take place here between the 23d of April and the 29th of June, 1896, and that the artists of the United States, as well as those of the other principal nations of the world, are cordially invited to present, at the Palacio de Bellas Artes, between the 20th of March and the 1st of April, such of their works as they may desire to exhibit. The sections of the Exposition will be seven in number—(1) painting, (2) sculpture, (3) architecture, (4) metallurgy, (5) ceramics and pottery, (6) wood carving, and (7) tapestry, lace, and embroidery. No exhibitor is expected to make more than four entries in any one section. The *Prix d'honneur* will be the sum of \$1,675, and medals of three classes will be awarded by a competent jury. Within fifteen days after the close of the exposition, the works exhibited will be delivered to their respective owners, who, except in special cases, will have to defray the expenses of transportation. In addition to the usual committees, a small honorary committee has been formed. The mayor and the city counselors have appointed Consul-General Bowen a member of it, and he has expressed to them his appreciation of their courtesy and his willingness to cooperate with them in their efforts to make the exposition a memorable event in the history of Barcelona.

Swiss Army Control.—Under date of November 5, 1895, Consul Germain, of Zurich, reports that a popular vote was taken Sunday, November 3, on the subject of the bill recently adopted by the Federal Assembly depriving the cantons of any share in the control over the army, and transferring the entire military administration to the Federal authorities, and that the bill was rejected by some 260,000 votes against 192,000, while the voting among the cantons was 17½ against and 4½ for the measure. On the same day, the citizens of the Canton of Zurich, by popular vote, adopted a law submitted to the people by the cantonal council, making it unlawful to sell articles of food otherwise than by actual weight.

Tourists in Switzerland.—Consul Germain, of Zurich, supplies the following figures:

The number of tourists registered at hotels and boarding houses in the city of Lucerne, from May 1 to October 15 of the years 1892 to and including 1895, was as follows:

Nationality.	1895.	1894.	1893.	1892.
Germany.....	30,689	28,160	25,734	22,218
Austria-Hungary.....	3,690	3,267	4,260	3,004
Great Britain.....	20,311	19,055	13,721	14,403
United States.....	11,885	9,671	3,771	9,641
France.....	9,130	8,515	8,097	8,825
Italy.....	2,762	2,836	3,533	2,815
Belgium and Netherlands.....	4,263	3,527	4,721	2,859
Sweden, Norway, and Denmark.....	923	816	803	712
Spain and Portugal.....	467	421	397	345
Russia.....	2,858	2,545	2,138	1,527
Balkan States.....	482	595	470	664
Switzerland*.....	12,810	10,956	12,290	9,192
Asia and Africa.....	792	635	726	764
Australia.....	165	170	219	264
Other countries.....	427	309	347	717
Total.....	101,654	91,403	81,227	77,950

* Societies, associations, schools, and commercial travelers are not included in the figures for Switzerland.

Proposed Legislation in Switzerland.—Consul Germain, of Zurich, under date of November 5, 1895, reports:

Cantonal employees.—In the neighboring Canton of Zug, two new laws have recently been framed, and are now under discussion before the cantonal legislature, and, if adopted, will be submitted to the vote of the citizens for final passage. The first of these laws refers to the remuneration of cantonal officers and employees, and has passed first reading. A noticeable improvement of the new act is that in case of sickness the cantonal officers and employees will continue to draw their salaries for a period not to exceed four months, even though a substitute has to be employed. If an employee, however, is prevented from attending to his duties for a period longer than four months, he then shall have to pay his substitute out of his own salary thereafter. If an official or employee dies while in the service, his

widow and minor children, or in the absence of such, his dependent parents, are entitled to draw the salary of the deceased for a period of four months, while more distant relatives shall have no claims whatever.

Revenue.—The second is an act to provide revenues for the government, to meet the cantonal expenditures. The Canton collects the following direct taxes, viz, property, income, inheritance, poll, and voters' tax. A noticeable change in taxing real estate and improvements is contemplated as against the method of the old law. While buildings have heretofore been taxed according to their insurance appraisement value, the revenue therefrom instead will be taxed in the future. This means a considerable increase for buildings situated in cities, such bringing a much higher revenue than those in villages, etc. Farm lands will only be taxed on a basis of their annual net returns; many farms in the rural districts of a value of \$20,000 return annually but about from \$300 to \$400. All this country property will in future be estimated and taxed according to the annual net income, if the law carries, and it is easy to see that the new law means a great relief to agriculturists.

Panama Transit Traffic.—Consul-General Vifquain, November 6, 1895, reports that, including the years 1893 and 1894, before the new United States tariff law was in force, the transit traffic across the Isthmus from San Francisco direct to Europe was practically nothing; but since that law went into effect this transit business tells altogether another story, and foots up for the last four months—July, August, September, and October—a total of 2,374 tons. These figures are official, and the railroad agent at Panama is at a loss to know what it means. This has been going on since last November. This transit traffic to Europe from San Francisco averages more than ever before in the history of the Panama Railroad.

Brazilian Refund of Duties.—Minister Thompson, of Rio de Janeiro, under date of October 7, 1895, reports that the National Congress has passed a resolution authorizing the refund of the duties illegally collected on American merchandise in contravention of the commercial arrangement, and transmits the following translation of a note from the Minister of Foreign Affairs, formally notifying him of that fact:

DEPARTMENT FOR FOREIGN AFFAIRS,

Rio de Janeiro, October 3, 1895.

I have the honor to communicate to Mr. Thomas L. Thompson, envoy extraordinary and minister plenipotentiary of the United States of America, that the President of the Republic has sanctioned a decree of the National Congress authorizing the opening of a supplementary credit of the sum of 1,700\$000 (\$928,200) to the verba "Reposicoes and restituicoes of the current fiscal year," article 7 of law No. 266, of December 24, 1894.

As Mr. Thompson will see from the inclosed clipping from the *Diario Oficial* of yesterday, which contains that decree, the necessary authorization is given for the restitution of the *expediente* duties collected by the custom-houses upon American merchandise, which should have been admitted free under the respective commercial arrangement.

I renew, etc.,

CARLOS DE CARVALHO.

American Trade with Morocco.—Under date of November 7, 1895, Consul-General Barclay, of Tangier, reports as follows:

In a recent communication from Mr. G. Broome, United States consular agent at Mogador, the most southern port on the coast of Morocco, he writes: "Wheat is getting so dear that the last two steamers brought out consignments of American flour, which was immediately sold at a profit."

The exports of skins from this port (Tangier) to the United States, for the last quarter were over \$100,000, and promise a large increase during the present year, and if direct communication from the United States could be established, thus lessening the cost of carriage, I am satisfied this Empire would be a profitable market for our breadstuffs, and that trade would grow to large proportions, in the near future, in this article, as well as in petroleum and lumber.

Tobacco Tax in the Argentine Republic.—Minister Buchanan, under date of October 14, 1895, advises the Department of the adoption by the Argentine Government of an internal tax on tobacco and cigars. It provides for a graded tax in proportion to the selling price of the article. A regulation which requires the stamp to be attached to each cigar has created dissatisfaction.

Consular Reports Transmitted to Other Departments.—The following reports (originals or copies) were transmitted during the month of December to other Departments for publication or for proper action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
James D. Reid, Dunfermline.....	Nov. 21, 1895	Agriculture.....	Department of Agriculture.
Henry C. Morris, Ghent.....	Nov. 23, 1895	Comparative labor legislation..	Bureau of Education.
Robert J. Kirk, Copenhagen.....	Nov. 26, 1895	Proclamation against the introduction of contagious diseases.	Marine Hospital Service.
Horatio R. Bigelow, Rouen.....	Oct. 3, 1895	Educational congress.....	Bureau of Education.
William W. Little, Tegucigalpa.	Nov. 9, 1895	New agricultural law in Honduras.	Department of Agriculture.
Henry C. Morris, Ghent.....	Feb. 6, 1895	Horticulture at Ghent.....	Do.

FOREIGN REPORTS AND PUBLICATIONS.

A French View of the United States Consular Service.*—The consular service of the United States occupies more and more the attention of the Government, which understands that the time has come for its reformation in a sense distinctly favorable to the development of the commercial relations between different countries, and with the still more especial purpose of facilitating the means for augmenting the export trade, which has become, it seems, the *sine qua non* of the prosperity of modern nations, metropolitan or colonial, from a point of view at once monetarial, industrial, and commercial. Other considerations call, moreover, if not for reform, at least for the improvement of the consular service, organized now as at the time when international commercial relations had but a fraction of the importance which they possess to-day. In short, the method of recruiting consuls is defective, even for the performance of their present functions.

It is this last consideration, no doubt, which decided the President of the United States to modify the course hitherto followed in filling the vacancies in the consulates and commercial agencies, of which the future incumbents, or at least a certain class of them, will be appointed on the conditions lately specified by Mr. Cleveland. According to the new Presidential decree, the appointments to places in the consulates or commercial agencies worth from 5,000 to 12,500 francs annually shall henceforth be made exclusively by means of promotion or selection. Promotion seems to permit the transfer from another Government department, and selection ought to be confirmed by an examination in regard to competency.

This new departure, which seems to have been prompted by the desire of President Cleveland to exempt the individual appointment to consulates from legislative influences as far as possible, will affect three-fourths of the American consular personnel abroad, but it leaves outside the greater and lesser personnel, which will continue to be appointed as in the past.

The necessity for a personnel irreproachable as to competency was not, according to the New York press, irrelevant to this consular reform, which the American chambers of commerce approve, not concealing their conviction that the public interest is largely concerned in the consular service abroad, and that this must be brought to the point of meeting modern requirements.

Guarding the American Export Trade.†—The United States Government has taken another means to protect the export trade. This consists in deny-

* Translated from a letter from the United States in the *Revue du Commerce Extérieur*, Paris, November 2, 1895.

† From the *Revue du Commerce Extérieur*, Paris, November 2, 1895.

ing the right of exportation to all live cattle and preserved meats, not accompanied by a certificate from an inspector of the Department of Agriculture of the absence of all epizootic in the first case, and of everything hurtful to health in the second. This measure seems to be important in a double sense. It is, first, a bold official initiative for putting an end to the export of a food product capable of injuring American commerce in the great foreign markets; then it is taking a stand for reducing to naught a certain number at least of the complaints which prompted the prohibition in Europe of certain American food products.

Both of these things may have important consequences. The first is perhaps but the beginning of this movement so desirable not only in the United States, but in the other great countries, and which will end by hindering the exportation of every indigenous or other product of a nature to compromise the interests of exportation. Whoever has resided awhile abroad or in the colonies knows the immense injury done to honest trade by dishonest trade, and will be happy to see the custom-houses of the different countries organize a kind of international commercial gendarmerie and prevent the exportation of everything that is bad. The United States customs administration has taken the initiative in this organization, and if the Government of the United States has adopted this measure in order to protect its export trade, why should not the French, English, and German Governments do the same? Meanwhile, and under pretext of free exportation, these continue to let go out free products that are notoriously of a kind to do the greatest injury to French, English, and German products in the great markets of the world.

When once the Americans are fully convinced that no damaged meat or preserved meat may any longer leave their country, they will become excessively sensitive as to the prohibition of these products abroad. They have a word of their own for expressing this excessive sensitiveness in everything which borders on a distinction prejudicially made. It is the word "discrimination," and when they have uttered it, they are not far from seeking the means of retaliation—means which in such case are always within their reach, for, errors excepted, the President of the United States is invested with the right to suspend customs concessions granted to a country which shall have used "discrimination" with regard to American products. It may, therefore, happen that when the forbidden export of all damaged meats or preserved meats shall have produced its full effect, American claims will be energetically heard in Europe.

Chinese-Italian Trade.*—The treaty of peace signed at Shimonoseki, on the 17th of April, 1895, put a stop, after eight months and a half, to the Chinese-Japanese war, which is destined to change the aspect of Oriental Asia.

* Report by the Italian Minister at Peking, from the *Bolletino del Ministero degli Affari Esteri*, for October, 1895; translated in the Department of State.

It will not be useless to examine at this time the commercial situation of China, what it is at the present moment, and what it shall develop in the early future, not forgetting to enter into particulars, because in this case especially it can be said that trade is the basis of politics.

During the last fifteen years, all countries, save some rare exceptions, such as Spain, have more or less increased their trade with China; but with five nations especially, the increase has proved itself by assuming considerable proportions. They are:

(1) The English colonies, especially India, which exports to China cotton thread in always increasing quantities.

(2) Japan, which exports textures of cotton that make a most serious competition with the English products, and matches that are sold at 26 cents per gross—that is, less than 1 centime per box. The retail seller of Japanese matches has no other profit but the one made by furnishing the tin case that incloses the boxes.

(3) The United States, which furnish the greater part of China with petroleum and flour.

(4) Germany, which, besides the supplies for the Government, arms and ammunition of every kind, overflows China with mercer's goods that are welcomed with great favor on account of their low price. The Chinese consumer is poor and seeks what costs little.

(5) Russia, which exports petroleum and imports tea.

One might also add Austria, though its increased trade has not been quite as progressive as that of the other five countries.

It would be impossible to state in what proportions this increase in trade has shown itself. The statistical tables published by the excellent custom-house administration of Sir R. Hart only give specific indications for two European countries—England and its colonies and Russia. All the supplies of the rest of Europe are comprised under the denomination of "European Continent." However, from these statistics one finds the exact number of vessels entering and leaving under foreign flags. Here is a table of the trade of China for the year 1894, according to the several countries [as carried in the vessels of each nationality]:

Countries.	Imports.	Exports.
	<i>Haikwan taels.*</i>	<i>Haikwan taels.*</i>
England and colonies.....	110,047,470	39,633,934
Germany.....	16,242,558	6,713,867
France.....	3,892,315	7,589,845
Denmark.....	3,009,308	1,607,616
Austria.....	2,064,708	464,760
Sweden and Norway.....	1,927,840	326,328
United States.....	1,111,482	142,907
Russia.....	88,431	2,227,669

* The Chinese measures vary not only from one province to the other, but from one branch of trade to the other. The value of the silver ounce, or tael, varies according to what is meant to be expressed, tael of Peking, Shanghai, etc., and also tael of the Treasury, jewelers' taels, etc. To remedy such confusion, the imperial customs administration has established a single tael, by which standard all customs duties are paid. This tael is known under the name of Haikwan tael—that is, customs tael.

In the following table can be seen the value of actual trade for the year 1894, imports and exports, as compared with the year 1887:

Countries.	1894.	1887.
	<i>Haikwan taels.</i>	<i>Haikwan taels.</i>
England and colonies.....	204,114,145	143,147,792
United States.....	25,705,870	12,314,310
European continent.....	24,889,675	14,132,954
Japan.....	18,386,805	7,678,442
Russia.....	12,081,912	7,769,547
Macao.....	4,477,285	2,902,643
French colonies of Indo-China.....	1,617,187	488,015

Therefore the United States, which in the first table occupied the seventh place, in the second table occupy the second, the greater part of their trade being carried under foreign flags.

Only two Italian vessels entered the ports of China in 1882, with 1,762 tonnage and a freight valued at 22,717 Haikwan taels, while in 1871, eight entered of a tonnage of 14,998 and a load of 239,484 Haikwan taels.

The resident Italians in China were 70 in 1882 and 133 in 1891. The Italian trading firms were 2 in 1882 and 4 in 1891.

The figures are not promising, truly; but they will appear less discouraging if they are considered in relation to the port of Shanghai and not to the vast empire. It is to Shanghai, in fact, as already stated, that our colony converges, prospering and increasing as the direct exportations from Shanghai to Italy increase.

Ever since the German Lloyd established a direct service from Genoa to Shanghai, there has been a reawakening of direct invoices for Italy, which were previously sent by the much longer and costly road via Marseilles. The Shanghai-Genoa line also attracts a quantity of merchandise in transit for Switzerland and southern Germany, which reaches its destination much faster by the railroad of Mount St. Gothard than by the road of Marseilles.

Silk occupies the first place in these direct exportations, and shows in the last few years the following increase: In 1891-92, 1,537 bales; 1892-93, 4,821 bales; 1893-94, 4,858 bales; 1894-95, 8,533 bales. From 1893 up to date, the direct exportation has therefore increased about 40 per cent, and this notwithstanding the tax of 3 francs per kilogram that France has imposed on manufactured silks coming from Italy, in order to favor the working in its own country of Asiatic silks. The quality of Chinese silk requires, before it can be woven, a treatment rather long and difficult; the ability and patience of our female operators, combined with their moderate charges, has made Upper Italy the center for the manufacture of these silks.

Shanghai also owes to Italians the establishment of silk-spinning factories according to European systems, which give good positions to Italian directors and overseers. The silk furnished by these factories is sold at rather high prices on the markets of New York and Lyons.

Other kinds of exportation from Shanghai for Italy are skins, refuse of silk, and silkworm pods, dried or forced; and we have also begun to export a certain quantity of cotton and seeds of sesame.

To help this trade, it is needed to encourage communications between Italy and China. For instance, it would be a great advantage if the vessels of the Peninsular and Oriental Line in their return voyages from Shanghai would touch at Genoa. The General Navigation Line only reaches as far as Hongkong, and Hongkong is not China.

The treaty of peace of April 17 provides, in its commercial part, that a new treaty of commerce is to be concluded between the two parties, which treaty will probably be the starting point for a revision of the treaties of commerce between China and the other countries.

The treaty of peace allows Japan two important concessions that naturally will be extended to those countries that enjoy in China the most-favored-nation clause. Four new ports are to be opened for the establishment of Japanese industries and manufactories—the ports of Sha-Shih, of Chung-King, of Suchow and of Hang-Chow; and the upper part of the great river Yangtze, from Ichang to Chung-King is to be opened for steam navigation, and also the river and canal of Woosung from Shanghai to Suchow and Hang-Chow.

The port of Sha-Shih, at the south of the province of Hupeh, in the heart of China, is situated on the river Yangtze, nearly at the middle of its course from Han-Kow and Ichang, which are the headquarters for the trade of the three provinces of Sze-chuen, Hunan, and Hupeh. The principal items of exportation are the pods and cocoons of silkworms.

Chung-King had already been declared open to English trade on the 30th of March, 1891, by an additional article to the convention of Chefoo. The distance from Ichang to Chung-King is 300 miles, and navigation on the Yangtze is very difficult on account of the frequent rapids in the course of the river. It was attempted to obtain from the Chinese Government the definite concession of the steamer traffic, and a special vessel was constructed at Glasgow, but the negotiations lasted so long and gave such little hope of good results to the enterprise, that the company was satisfied with selling its vessel to the Chinese authorities, giving up for the time being the pursuit of its purpose. The great opposition against steam navigation on this part of the river depends, besides political reasons, on the damage it would cause to the innumerable junks that now enjoy the monopoly of the transportation of goods and passengers for all the upper part of the river. With section 2 of Article VI of the treaty of peace, steam navigation from Ichang to Chung-King is allowed, so that this important port can be considered from the present as being really open and destined to obtain, in the near future, its natural development.

With the opening of the ports of Sha-Shih and Chung-King, the greatest river of China will be free to Europeans, and steamers will be able to penetrate into the distant province of Sze-chuen, so little frequented by foreigners.

Of still greater importance, one can rate the opening of Suchow and of Hang-Chow, the first in the southern part of the province of Kiang-Soo, to the right of Lake Tai-hu, and the second in the northern part of the province of Che-Kiang, both emporiums for a very flourishing trade in silk. In each city there exists a factory of stuffs and embroideries of silk and satin for the exclusive use of the imperial family. The private industry is, however, carried on with old models and systems; if machines were substituted, our Lombard citizens would reap a higher profit than anyone else, because, as has already been said, they have acquired in China the specialty for spinning silk.

There still remains a desideratum—the opening of the navigation of the Canton River and the opening of trade with the city of Peking.

Expositions and Museums.*—*Commercial Museum at Bordeaux.*—M. Oscar Geraud and various merchants having presented, in a joint letter to the Chamber of Commerce of Bordeaux, a plan for creating a commercial and industrial museum at Bordeaux, the latter replied:

SIR: By the joint letter addressed to me by you on the 24th of September, you were kind enough to inform me of the initiative taken by you for establishing at Bordeaux a commercial and industrial museum, forming a permanent and universal exposition open to all products of industry, agriculture, and all the arts. You at the same time solicit the patronage of the Chamber of Commerce.

Our chamber has examined your communication with all the interest due to it. It notes with pleasure all the efforts that may be made by private effort in view of favoring and developing commercial transactions.

Without disregarding the importance of the work which you seek to create and the services it may accomplish, our chamber has considered that it can not grant its official patronage to an institution which at present seems to have the character of a private interest rather than that of a general one, and which has not yet proved its vitality, and by an effective organization responded to the views of its originators.

An Exposition of French Products at Montevideo.—The Chamber of Commerce of Marseilles invites the merchants and manufacturers to call and acquaint themselves with a circular from the Minister of Commerce relative to the interest which French industry would have in making an exposition of its products at the exposition organized at Montevideo, by the Rural Association of Uruguay, which is closed, and after the exposition by the manufacturers of North America, which is to be installed in the same buildings, will be over.

Railways in China.—The following information relative to railways in China, is taken from the North China Mail of November 1, 1895:

It is reported in native official circles here that the Viceroy Chang has given the building of the railway between Chinkiang and Tientsin to a French syndicate, whose representa-

* Translation from the *Revue du Commerce Extérieur*, Paris, November 2, 1895.

tive is the gentleman who was formerly in charge of and who finished the Port Arthur docks on behalf of the Tientsin French syndicate.

Dispatches received from Peking report that the two railway lines have been sanctioned by the Throne, one to connect with Tientsin, the Peking depot, to be at Shakuo Gate, and another line to commence from the western suburbs of the capital (Lokou bridge) to connect with Tsingkiangp'u, on the Grand Canal. Hū-fen, Judge of Kuangsi, having given up command of the Wusheng disciplined army corps at Tientsin in favor of the Yuan Shih-k'ai, is soon expected in Peking to take the chief directorship of the building of these two lines.

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Full directions for binding the Consular Reports are given in No. 131, page 663.

VALUES OF FOREIGN COINS.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

These estimates "are to be taken (by customs officers) in computing the value of all foreign merchandise made out in any of said currencies, imported into the United States."

The following statements, running from January 1, 1874, to April 1, 1894, have been prepared to assist in computing the proper values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account that the ruble of Russia, for instance, has fluctuated from 77.17 cents in 1874 to 37.2 cents in April, 1894, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, and 1882 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—Countries with fixed currencies.

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange." It follows, therefore, that when foreign money orders are required, the post-office authorities, to save the Department from incurring loss in such transactions, add the rate of exchange to these valuations.

Countries.	Standard.	Monetary unit.	Value in terms of United States gold.	Coins.
Argentine Republic*	Gold and silver...	Peso	\$0.96, 5	Gold—Argentine (\$4.82, 4) and ½ Argentine; silver—peso and divisions.
Austria-Hungary†	Gold	Crown .....	.20, 3	Gold—20 crowns (\$4.05, 2) and 10 crowns.
Belgium.....	Gold and silver...	Franc.....	.19, 3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil.....	Gold	Milreis .....	.54, 6	Gold—5, 10, and 20 milreis; silver—½, 1, and 2 milreis.
British North America (except Newfoundland)	.... do.....	Dollar.....	1.00	
Chile‡	Gold and silver...	Peso .....	.91, 7	Gold—escudo (\$1.82, 4), doubloon (\$4.56, 1), and condor (\$0.12, 8); silver—peso and divisions.
Cuba.....	....do.....	....do.....	.92, 6	Gold—doubloon (\$5.01, 7); silver—peso.
Denmark.....	Gold	Crown.....	.26, 8	Gold—10 and 20 crowns.
Egypt.....	....do.....	Pound (100 piasters).	4.94, 3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland.....	....do.....	Mark.....	.19, 3	Gold—10 and 20 marks (\$1.93 and \$3.85, 9).
France.....	Gold and silver...	Franc.....	.19, 3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany.....	Gold	Mark.....	.23, 8	Gold—5, 10, and 20 marks.
Great Britain.....	....do.....	Pound sterling....	4.86, 6½	Gold—sovereign (pound sterling) and half sovereign.
Greece.....	Gold and silver...	Drachma.....	.19, 3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti.....	....do.....	Gourde.....	.96, 5	Silver—gourde.
Italy.....	....do.....	Lira.....	.19, 3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Liberia.....	Gold	Dollar.....	1.00	
Netherlands§	Gold and silver...	Florin.....	.40, 2	Gold—10 florins; silver—½, 1, and 2½ florins.
Newfoundland.....	Gold	Dollar.....	1.01, 4	Gold—\$2 (\$2.02, 7).
Portugal.....	Gold	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Spain.....	Gold and silver...	Peseta.....	.19, 3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway...	Gold	Crown.....	.26, 8	Gold—10 and 20 crowns.
Switzerland.....	Gold and silver...	Franc.....	.19, 3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey.....	Gold	Piaster.....	.04, 4	Gold—25, 50, 100, 200, and 500 piasters.
Venezuela.....	Gold and silver...	Bolivar.....	.19, 3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

* In 1874 and 1875 the gold standard prevailed in the Argentine Republic. Its currency does not appear in the statements again until 1883, when the double standard prevailed, and the peso attained a fixed value of 96.5 cents.

† On reference to the table of "fluctuating currencies," it will be seen that Austria had the silver standard up to and including the quarter ending July 1, 1892. The next quarter (October 1) inaugurated the gold standard (see note under table of "fluctuating currencies").

‡ The gold standard prevailed in Chile until January 1, 1890. The value of the peso has been the same under both standards.

§ The Netherlands florin, as will be seen in the "fluctuating" table, became fixed in value (40.2 cents) in 1880.

B.—Countries with fluctuating currencies, 1874-'90.

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875.	1876.	1880.	1883.	1884.
Austria-Hungary*	Silver.....	Florin.....	\$0.47,6	\$0.45,3	\$0.45,3	\$0.41,3	\$0.40,1	\$0.39,8
Bolivia.....	do.....	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America.....	do.....	Peso.....	.96,5	.91,8	.91,8	.83,6		
China.....	Silver.....	Haikwan tael..	1.61	1.61				
Colombia.....	do.....	Peso.....	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador.....	do.....	do.....	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†.....	Gold.....	Pound (100 piasters).			4.97,4	4.97,4	4.90	4.90
India.....	Silver.....	Rupee.....	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan.....	{ Gold..... Silver..... }	{ Yen..... Yen..... }	{ .99,7 .99,7 }	{ .99,7 .99,7 }	{ .99,7 .99,7 }	{ .99,7 .99,7 }	.87,6	.86,9
Mexico.....	do.....	Dollar.....	1.04,7½	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands.....	Gold and silver.	Florin.....	.40,5	.38,5	.38,5	.40,2		
Peru.....	Silver.....	Sol.....	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia.....	do.....	Ruble.....	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli.....	do.....	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*	Silver.....	Florin.....	\$0.39,3	\$0.37,1	\$0.35,9	\$0.34,5	\$0.33,6	\$0.42
Bolivia.....	do.....	Dollar until 1880; boliviano thereafter.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America.....	do.....	Peso.....				.69,9	.68	.85
Colombia.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†.....	Gold.....	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.93,3
India.....	Silver.....	Rupee.....	.37,8	.35,7	.34,6	.33,2	.32,3	.40,4
Japan.....	{ Gold..... Silver..... }	{ Yen..... Yen..... }	{ .85,8 .81 }	{ .81 .78,4 }	{ .99,7 .78,4 }	{ .99,7 .75,3 }	{ .99,7 .73,4 }	{ .99,7 .91,7 }
Mexico.....	do.....	Dollar.....	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru.....	Silver.....	Sol.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia.....	do.....	Ruble.....	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli.....	do.....	Mahbub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (*see* CONSULAR REPORTS, No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at \$4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—Quarterly valuations of fluctuating currencies, 1891-'94.

Countries.	Monetary unit.	1893.				1894.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia.....	Silver boliviano.....	\$0.61,3	\$0.61	\$0.60,4	\$0.53,1	\$0.51,6	\$0.46,5	\$0.45,7	\$0.46,4
Central America...	Silver peso.....	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
	{ Shanghai tael.....	.90,6	.90,1	.89,2	.78,4	.76,2	.68,6	.67,6	.68,5
	{ Haikwan tael.....	1.01	1.00,4	.99,4*	.87,4	.84,9	.76,5	.75,3	.76,3
China*	Tien-Tsin tael.....								.72,7
	Chefoo tael.....								.72,7
Colombia.....	Silver peso.....	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
Ecuador.....	do.....	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
India.....	Silver rupee.....	.29,2	.29	.28,7	.25,2	.24,5	.22,1	.21,7	.22
Japan†.....	Silver yen.....	.66,1	.65,8	.65,1	.57,3	.55,6	.50,1	.49,3	.50
Mexico.....	Silver dollar.....	.66,6	.66,2	.65,6	.57,7	.56	.50,5	.49,7	.50,4
Peru.....	Silver sol.....	.61,3	.61	.60,4	.53,1				
Russia‡.....	Silver ruble.....	.49,1	.48,8	.48,3	.42,5	.51,6	.46,5	.45,7	.46,4
Tripoli.....	Silver mahbub.....	.55,3	.55	.54,5	.47,9	.47,3	.37,2	.36,6	.37,1
Venezuela §.....	Silver bolivar.....					.46,5	.41,9	.41,3	.41,8

Countries.	Monetary unit.	1895.				Jan. 1, 1896.
		Jan. 1.	April 1.	July 1.	Oct. 1.	
Bolivia.....	Silver boliviano.....	\$0.45,5	\$0.44,1	\$0.48,6	.48,6	\$0.49,1
Central America.....	Silver peso.....	.45,5	.44,1	.48,6	.48,6	.49,1
	{ Shanghai tael.....	.67,3	.65,2	.71,8	.71,8	.72,5
	{ Haikwan tael.....	.74,9	.75,6	.80	.80,0	.80,8
China*	Tien-Tsin tael.....	.71,4	.69,2	.76,1	.76,2	.76,9
	Chefoo tael.....	.70,4	.68,3	.75,1	.75,2	.75,9
Colombia.....	Silver peso.....	.45,5	.44,1	.48,6	.48,6	.49,1
Ecuador.....	do.....	.45,5	.44,1	.48,6	.48,6	.49,1
India.....	Silver rupee.....	.21,6	.21,0	.23,1	.23,1	.23,3
Japan†.....	Silver yen.....	.49,1	.47,6	.52,4	.52,4	.52,9
Mexico.....	Silver dollar.....	.49,5	.47,9	.52,8	.52,8	.53,3
Persia.....	Silver kran.....			.08,9	.09,0	.09
Peru.....	Silver sol.....	.45,5	.44,1	.48,6	.48,6	.49,1
Russia‡.....	Silver ruble.....	.36,4	.35,3	.38,9	.38,9	.39,3
Tripoli.....	Silver mahbub.....	.41,1	3-9,8	.43,8	.43,8	.44,3

* China (silver). The Haikwan tael is the customs tael, and the Shanghai tael that used in trade. Consul-General Denny (CONSULAR REPORTS No. 43, p. 516) says: "The value of the tael varies in the different ports of China, and every port has two taels, one being the Government, or Haikwan, tael, in which all duties have to be paid, and the other the market tael, the former exceeding the latter by some 11 per cent."

† Gold is the nominal standard in Japan, but silver is practically the standard. The fixed value of the gold yen is 99.7 cents.

‡ The gold ruble is valued at 77.2 cents. Silver is the nominal standard, but paper is the actual currency, and its depreciation is measured by the gold standard.

§ The Venezuelan bolivar became fixed in value (19.3 cents) on January 1, 1892.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalent.
Aimude.....	Portugal.....	4.422 gallons.
Ardeb.....	Egypt.....	7.6907 bushels.
Are.....	Metric.....	0.02471 acre.
Arobe.....	Paraguay.....	25 pounds.
Arratel or libra.....	Portugal.....	1.011 pounds.
Arroba (dry).....	Argentine Republic.....	25.3175 pounds.
Do.....	Brazil.....	32.38 pounds.
Do.....	Cuba.....	25.3664 pounds.
Do.....	Portugal.....	32.38 pounds.
Do.....	Spain.....	25.36 pounds.
Do.....	Venezuela.....	25.4024 pounds.
Arroba (liquid).....	Cuba, Spain, and Venezuela.....	4.263 gallons.
Arshine.....	Russia.....	28 inches.
Arshine (square).....	do.....	5.44 square feet.
Artel.....	Morocco.....	1.12 pounds.
Biril.....	Argentine Republic and Mexico.....	20.0787 gallons.
Barrel.....	Malta (customs).....	11.4 gallons.
Do.....	Spain (raisins).....	100 pounds.
Berkovet.....	Russia.....	361.12 pounds.
Bongkal.....	India.....	832 grains.
Bonw.....	Sumatra.....	7,096.5 square meters.
Bu.....	Japan.....	0.1 inch.
Butt (wine).....	Spain.....	140 gallons.
Caffiso.....	Malta.....	5.4 gallons.
Candy.....	India (Bombay).....	529 pounds.
Do.....	India (Madras).....	500 pounds.
Cantar.....	Morocco.....	113 pounds.
Do.....	Syria (Damascus).....	575 pounds.
Do.....	Turkey.....	124.7036 pounds.
Cantaro (Cantar).....	Malta.....	175 pounds.
Carga.....	Mexico and Salvador.....	300 pounds.
Catty.....	China.....	1.333½ (1½) pounds.
Do.....	Japan.....	1.31 pounds.
Do.....	Java, Siam, Malacca.....	1.35 pounds.
Do.....	Sumatra.....	2.12 pounds.
Centaro.....	Central America.....	4.2631 gallons.
Centner.....	Bremen and Brunswick.....	117.5 pounds.
Do.....	Darmstadt.....	110.24 pounds.
Do.....	Denmark and Norway.....	110.11 pounds.
Do.....	Nuremberg.....	112.43 pounds.
Do.....	Prussia.....	113.44 pounds.
Do.....	Sweden.....	93.7 pounds.
Do.....	Vienna.....	123.5 pounds.
Do.....	Zollverein.....	110.24 pounds.
Do.....	Double or metric.....	220.46 pounds.
Chih.....	China.....	14 inches.
Coyan.....	Sarawak.....	3,098 pounds.
Do.....	Siam (Koyan).....	2,667 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Cuadra.....	Argentine Republic.....	4.2 acres.
Do.....	Paraguay.....	78.9 yards.
Do.....	Paraguay (square).....	8.077 square feet.
Do.....	Uruguay.....	Nearly 2 acres.
Cubic meter.....	Metric.....	35.3 cubic feet.
Cwt. (hundredweight).....	British.....	112 pounds.
Dessiatine.....	Russia.....	2.6997 acres.
Do.....	Spain.....	1.599 bushels.
Drachme.....	Greece.....	Half ounce.
Dun.....	Japan.....	1 inch.
Egyptian weights and measures.....	(See CONSULAR REPORTS No. 144.)	
Fanega (dry).....	Central America.....	1.5745 bushels.
Do.....	Chile.....	2.575 bushels.
Do.....	Cuba.....	1.599 bushels.
Do.....	Mexico.....	1.54728 bushels.
Do.....	Morocco.....	Strike fanega, 70 lbs.; full fanega, 118 lbs.
Do.....	Uruguay (double).....	7.776 bushels.
Do.....	Uruguay (single).....	3.888 bushels.
Do.....	Venezuela.....	1.599 bushels.
Fanega (liquid).....	Spain.....	16 gallons.
Feddan.....	Egypt.....	1.03 acres.
Frail (raisins).....	Spain.....	50 pounds.
Frasco.....	Argentine Republic.....	2.5096 quarts.
Do.....	Mexico.....	2.5 quarts.
Fuder.....	Luxemburg.....	264.17 gallons.
Garnice.....	Russian Poland.....	0.88 gallon.
Gram.....	Metric.....	15.432 grains.
Hectare.....	.....do.....	2.471 acres.
Hectoliter:		
Dry.....	.....do.....	2.838 bushels.
Liquid.....	.....do.....	26.417 gallons.
Joch.....	Austria-Hungary.....	1.422 acres.
Ken.....	Japan.....	4 yards.
Kilogram (kilo).....	Metric.....	2.2046 pounds.
Kilometer.....	.....do.....	0.021376 mile.
Klafter.....	Russia.....	216 cubic feet.
Kota.....	Japan.....	5.13 bushels.
Korree.....	Russia.....	3.5 bushels.
Last.....	Belgium and Holland.....	85.134 bushels.
Do.....	England (dry malt).....	82.52 bushels.
Do.....	Germany.....	2 metric tons (4,480 pounds).
Do.....	Prussia.....	112.29 bushels.
Do.....	Russian Poland.....	11.8 bushels.
Do.....	Spain (salt).....	4,760 pounds.
League (land).....	Paraguay.....	4,633 acres.
Li.....	China.....	2,115 feet.
Libra (pound).....	Castilian.....	7,100 grains (troy).
Do.....	Argentine Republic.....	1.0127 pounds.
Do.....	Central America.....	1.043 pounds.
Do.....	Chile.....	1.014 pounds.
Do.....	Cuba.....	1.0161 pounds.
Do.....	Mexico.....	1.01465 pounds.
Do.....	Peru.....	1.0143 pounds.
Do.....	Portugal.....	1.011 pounds.
Do.....	Uruguay.....	1.0143 pounds.
Do.....	Venezuela.....	1.0161 pounds.
Liter.....	Metric.....	1.0567 quarts.
Livre (pound).....	Greece.....	1.1 pounds.
Do.....	Guyana.....	1.0791 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Load.....	England (timber).....	Square, 50 cubic feet; unbewn, 40 cubic feet; inch planks, 600 super- ficial feet.
Manzana	Costa Rica.....	1½ acres.
Marc.....	Bolivia.....	0.507 pound.
Maund.....	India.....	82½ pounds.
Meter.....	Metric.....	39.37 inches.
Mil.....	Denmark.....	4.68 miles
Do.....	Denmark (geographical).....	4.61 miles.
Morgen.....	Prussia.....	0.63 acre.
Oke.....	Egypt.....	2.7225 pounds.
Do.....	Greece.....	2.84 pounds.
Do.....	Hungary.....	3.0817 pounds.
Do.....	Turkey.....	2.85418 pounds.
Do.....	Hungary and Wallachia.....	2.5 pints.
Pic.....	Egypt.....	21¾ inches.
Picul.....	Borneo and Celebes.....	135.64 pounds.
Do.....	China, Japan, and Sumatra.....	133½ pounds.
Do.....	Java.....	135.1 pounds.
Do.....	Philippine Islands (hemp).....	139.45 pounds.
Do.....	Philippine Islands (sugar).....	140 pounds.
Pie.....	Argentine Republic.....	0.9478 foot.
Do.....	Castilian.....	0.91407 foot.
Pik.....	Turkey.....	27.9 inches.
Pood.....	Russia.....	36.112 pounds.
Puod (pound).....	Denmark and Sweden.....	1.102 pounds.
Quarter.....	Great Britain.....	8.252 bushels.
Do.....	London (coal).....	36 bushels.
Quintal.....	Argentine Republic.....	101.42 pounds.
Do.....	Brazil.....	130.06 pounds.
Do.....	Castile, Chile, Mexico, and Peru.....	101.61 pounds.
Do.....	Greece.....	123.2 pounds.
Do.....	Newfoundland (fish).....	112 pounds.
Do.....	Paraguay.....	100 pounds.
Do.....	Syria.....	125 pounds.
Do.....	Metric.....	220.46 pounds.
Rottle.....	Palestine.....	6 pounds.
Do.....	Syria.....	5¾ pounds.
Sagen.....	Russia.....	7 feet.
Salm.....	Malta.....	490 pounds.
Se.....	Japan.....	3.6 feet.
Seer.....	India.....	1 pound 13 ounces.
Shaku.....	Japan.....	10 inches.
Sho.....	do.....	1.6 quarts.
Standard (St. Petersburg).....	Lumber measure.....	165 cubic feet.
Stone.....	British.....	14 pounds.
Suerte.....	Uruguay.....	2,700 cuadras (see cua- dra).
Tael.....	Cochin China.....	590.75 grains (troy).
Tan.....	Japan.....	0.25 acre.
To.....	do.....	2 pecks.
Ton.....	Space measure.....	40 cubic feet.
Tonde (cereals).....	Denmark.....	3.94783 bushels.
Tondeland.....	do.....	1.36 acres.
Tsubo.....	Japan.....	6 feet square.
Tsun.....	China.....	1.41 inches.
Tunna.....	Sweden.....	4.5 bushels.
Tunnland.....	do.....	1.22 acres.
Vara.....	Argentine Republic.....	34.1208 inches.
Do.....	Castile.....	0.914117 yard.
Do.....	Central America.....	38.874 inches.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Vara.....	Chile and Peru.....	33.367 inches.
Do.....	Cuba.....	33.384 inches.
Do.....	Curaçao.....	33.375 inches.
Do.....	Mexico.....	33 inches.
Do.....	Paraguay.....	34 inches.
Do.....	Venezuela.....	33.384 inches.
Vedro.....	Russia.....	2.707 gallons.
Vergees.....	Isle of Jersey.....	71.1 square rods.
Verst.....	Russia.....	0.663 mile.
Vlocka.....	Russian Poland.....	47.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
 Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
 Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
 Gram equals 15.432 grains.
 Decagram (10 grams) equals 0.3527 ounce.
 Hectogram (100 grams) equals 3.5274 ounces.
 Kilogram (1,000 grams) equals 2.2046 pounds.
 Myriagram (10,000 grams) equals 22.046 pounds.
 Quintal (100,000 grams) equals 220.46 pounds.
 Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
 Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
 Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
 Liter equals 0.908 quart.
 Decaliter (10 liters) equals 9.08 quarts.
 Hectoliter (100 liters) equals 2.838 bushels.
 Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
 Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
 Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
 Liter equals 1.0567 quarts.
 Decaliter (10 liters) equals 2.6418 gallons.
 Hectoliter (100 liters) equals 26.418 gallons.
 Kiloliter (100 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
 Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
 Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
 Meter equals 39.37 inches.

Decameter (10 meters) equals 393.7 inches.

Hectometer (100 meters) equals 328 feet 1 inch.

Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).

Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.

Are (100 square meters) equals 119.6 square yards.

Hectare (10,000 square meters) equals 2.471 acres.

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FREE PORT OF HAMBURG.

The history of Hamburg shows that, as far back as the Middle Ages, and even before, the city of Hamburg has been in possession of a free port and its traffic independent of customs duties, and that to this fact is largely due the rapid growth of its trade. Navigation in its port was nearly free from taxes, and, traditionally, any change in these conditions was considered tantamount to its ruin. Therefore, when, in 1834, the other German States formed the German customs union, the free Hanseatic towns—Hamburg, Bremen, and Lübeck—in order to preserve their free and independent trade did not join them. They were afraid to enter that union, because they felt convinced that by so doing they would lose their freedom of navigation. When the North German federation was founded in 1867, Lübeck, with all its territory, joined the customs union; but the free-port portions of Hamburg and Bremen, with the exception of a small part of their original areas, still remained outside. The cities and their environs, and the rivers Elbe and Weser, with their tributaries some distance above and below the towns, remained free ports. They were able to do this, as they were protected by an article of the constitution of the North German federation, which afterwards passed into the constitution of the present German Empire, and which read thus:

ARTICLE 34. The Hanseatic towns, Bremen and Hamburg, with a corresponding district of their, or the surrounding territory, remain outside of the common customs frontier, as free ports, until they shall move their entering the same.

In spite of this protection of the free ports of the Hanseatic towns, a general and strong demand that Hamburg and Bremen should enter the customs union soon began to manifest itself in the press, in pamphlets, and even

in the parliaments. After the founding of the Empire, this feeling became more powerful than ever before, and the official press began to protest that it could no longer be overlooked. It pointed to article 33 of the constitution, which reads:

Germany forms one customs and trade territory, surrounded by a common customs frontier.

The press contended that, until Hamburg and Bremen had entered the customs union, the German Empire would not be perfect. When Prince Bismarck, the chancellor, openly declared himself in favor of this annexation, the question became a burning one, and did not disappear from public discussion. The German press was divided; the population of the Hanseatic towns stood in strong opposition; they would not recede from their free-port policy. The ruin of the trade and towns was prophesied by the leaders of the opposition to what was then styled "the pressure from Berlin."

The senates—the governing bodies of both communities—were in principle also opposed to annexation; but they soon realized the utter uselessness of prolonged resistance against the power of the chancellor, the Government, and the national wishes. Negotiations were, therefore, finally entered into, and, after long discussions, a treaty was framed between the representatives of the Empire and of Hamburg, and signed on May 25, 1881, which, after a long struggle, was ratified by the Bürgerschaft, the legislative corporation of Hamburg, on June 15, 1881, and by the Imperial Diet on January 21, 1882.

Hamburg, with its territory, has an area of about 97,500 acres. From 1867 to October 15, 1888, about 18,500 acres were outside of the customs union, and constituted the free port. According to the treaty of May 25, 1881, with the German Empire, the area of this free port was to be reduced to 2,500 acres, of which 750 acres were water and 1,750 acres land. The question as to how to arrange this was not an easy one. Naturally it was the desire of the Hamburg government that the annexation of the dwelling city, which was located on both sides of the River Elbe, should be accomplished without its free traffic of vessels and commerce being impeded. Two projects were presented, either of which, it was thought, would solve the question. According to the first, the River Elbe itself was to be surrendered to the customs union and duty-free harbors constructed, in connection with those already existing, on the English dock system, and surrounded with secure customs barriers. According to the second project, the river was to be taken into the free-port district, with the exception of a narrow part of the same on the north bank, which was to serve as a connecting waterway between the customs district above and below the free port, for vessels desirous of going up or down the river without entering the free port.

Owing to the peculiar and complicated geographical location of Hamburg and its port, it was found impracticable, and almost impossible, to carry out the former scheme; and so, after much deliberation, the latter was adopted as the only feasible one. Upon it the aforementioned treaty was based.

The city of Bremen was obliged to adopt a project similar to the one first mentioned, and principally for the reason that the River Weser, upon which it is situated, was, then at least, not navigable up to the city for large sea-going vessels. The free port of Bremen is a short distance below the city proper.

The work of construction was commenced soon after the conclusion of the treaty, and was well-nigh completed on October 15, 1888, the day upon which the dwelling city of Hamburg and its surroundings was formally annexed to the customs union. On October 29th of the same year, the last stone of this great undertaking was placed in position by the German Emperor, in the presence of many of the highest dignitaries and officials of the Empire.

With the exception of the 2,500 acres of land and water already referred to as reserved for the free port, and the port of Cuxhaven, at the mouth of the River Elbe, the State of Hamburg, with its entire territory and over 500,000 inhabitants, thus became a part of the German customs union. At the same time, the adjoining Prussian cities of Altona and Wandsbeck, which had also enjoyed free port privileges, were annexed to the union.

All the qualities upon which depended the might and power of the commercial community of Hamburg were reserved, and only the dwelling city proper and its inhabitants became German, so to speak. The only innovation of consequence was that these inhabitants, and those of the adjoining two cities, were now subject to the payment of customs duties to the same extent as all of their fellow-countrymen. Formerly, they had only paid a comparatively small lump sum, the so-called *aversum*, to the Empire, which was fixed per capita of the population, and was regarded as an equivalent for their exemption from customs duties. This *aversum* now ceased, and every individual inhabitant had to pay just as much for his necessities of life and luxuries as any of his German brothers. These inhabitants, about 800,000 in number, now suddenly became consumers of, and customers for, German wares and articles of industry, and this very fact was, no doubt, the chief argument used by the Government for the annexation; for it was clear enough that if these 800,000 people were no longer in a position to consume English and other foreign articles of industry free of duty, they would buy the German ones, on account of their greater cheapness.

The chief points covered by the treaty between the German Empire and Hamburg on May 25, 1881, regarding the proposed annexation of the latter are about as follows:

The free and Hanseatic town of Hamburg is prepared to join the customs district of the Empire with its entire territory, with the exception of the district hereafter mentioned and described.

For this district, which permanently remains to the city of Hamburg as a free port, article 34 of the constitution of the Empire retains its validity, with the effect that the free-port privileges of this district can neither be suspended or restricted without Hamburg's consent.

The free-port district comprises the North Elbe at Hamburg, the harbors and quays there, together with a part of the adjoining streets and blocks of houses, and the island in the River

Elbe opposite the town, including the island of Steinwärder. Inside of this free-harbor district, which is to be guarded by customs officers exclusively from the outside, the movement of vessels and merchandise is exempt from customs control, and the unlimited construction of industrial establishments is permitted.

The boundary of the free-port district in the north and east is formed by the station and the railway embankment of the Venlo-Hamburg Railway. In the south and west, the boundary shall, upon the motion of Hamburg, be extended to the customs frontier agreed upon by the federal council for the annexation of Altona and the Lower Elbe. In like manner, upon the motion of Hamburg, the peninsula, which is separated from the town by the canal leading from the inner to the upper harbor, or that part of the same which shall be designated by Hamburg as necessary therefor, shall be incorporated in the free-port district. The blocks of buildings belonging to the free port, on the northern bank of the Elbe, shall not be used as dwellings (with the exception of those necessary for warehouse keepers, and for port, customs, and police officers), nor for retail trade.

The territory belonging to the free-port district and situated on the southern bank of the Elbe shall not, as far as it is the property of the free Hanseatic city of Hamburg, have constructed upon it any more buildings designated for dwellings or retail-trade purposes than are absolutely necessary for administration and supervision. The dwellings and retail shops now existing in the southern free-port district shall, as far as they do not serve the aforementioned purposes, be removed as rapidly as practicable. On the part of Hamburg, all other arrangements which would promote the customs security, will be taken into consideration as far as possible.

The port of Cuxhaven remains, as before, outside of the customs line.

The large industrial manufactories working for the export trade, which desire to manufacture foreign products free of duty, are, for the future, assigned to the free-port district. The establishments of this kind now existing within the future customs district, as far as they can not be removed to the free-port district on account of their dimensions, shall, for a longer period, be permitted to continue their manufacturing [the year 1900]. To these latter industrial establishments belong: (1) spirit distilleries; (2) corn distilleries, connected with the manufacture of yeast, and manufacturing for export; (3) lard refineries, manufacturing for export; (4) rice mills; (5) export slaughterhouses; (6) Shipbuilding yards, situated within the future customs district; (7) an existing steam-refinery which manufactures from sugar cane.

The entire customs administration in the Hamburg territory, with the exception of the custom-house at Cuxhaven, is carried on by Hamburg authorities and officers.

The existing customs buildings, as far as they are not put out of use, pass gratuitously to Hamburg.

For the customs dispatching system, in the Hamburg customs ports and in the warehouses, special regulations will be issued, in which the facilitation and simplification of the customs dispatching will be given as much consideration as possible.

The regulations based upon the customs laws of the Empire shall, in regard to their application to Hamburg, be revised in such manner that only such restrictions and formalities as are absolutely necessary for the fiscal interests, will be imposed upon its commerce and traffic.

The German Empire will pay toward the costs of buildings, establishments, arrangements, and expropriations, caused by Hamburg's annexation to the customs union, a maximum sum of 40,000,000 marks (\$9,520,000). This amount is to be paid into the Hamburg treasury within ten years, in equal annual installments.

The senate of Hamburg will cause all buildings and constructions rendered necessary by the annexation to be executed with as great haste as possible.

When the senate, in its motion of June 3, 1881, laid before the Bürger-schaft this treaty for ratification, it gave it as its opinion that its provisions were as favorable as could ever be hoped for, and that by its acceptance a

question that would continually be arising and pressed by the federal government and the German people at large, and which could no longer remain without a solution, would be settled once and for all.

The weight of this and other forcible arguments was sufficient to convince the Bürgerschaft of the advisability of passing the bill which ratified the treaty.

The work of construction was begun soon afterwards, and pushed along with remarkable rapidity, and about seven years after the ratification of the treaty the great work was practically completed. The regulations provided for in the treaty have since been observed with the greatest exactness and friendliness on both sides.

On the 15th of October, 1888, the day upon which the city was annexed to the customs union, all articles of merchandise, down to the wines, liquors, and tobacco in private dwellings, which, on that day were within the annexed territory, and which would be dutiable under the German tariff, were subjected to the payment of the full customs duties. Some time before that day, all the inhabitants of the new free-port district, with the exception of about 1,500 harbor, customs, and police officers, had removed to the city proper, or its environs. By the 15th of October, all the new waterways, nearly all the new warehouses, the new quays and landing places, and the inclosures of the new free port, were completed; the army of customs officers were at their posts, and the vast machinery was set in motion. It is a fact worthy of note that it worked smoothly almost from that very day, and that, before many weeks had passed, the people of Hamburg had become almost entirely reconciled to all the innovations and petty inconveniences attendant upon such a change.

SPECIAL OBJECTS OF THE FREE PORT.

In the instruction calling for this report, it has been asked what were the special objects sought to be obtained by the establishment of a free port here, and what have been the practical results obtained thereby, and comparative figures of the commerce of the port for the years preceding and following the opening of the same have been requested. These questions apparently overlook the fact that the celebrated opening of the new Hamburg free port in 1888, in the presence of the highest officials and dignitaries of the Empire, was by no means the real beginning of the present free-port system here.

As already stated, Hamburg, or rather about 18,500 acres of its territory as a state, had been a free port from time immemorial. There is no doubt that its early inhabitants, with commendable foresight, concluded that the experiment of having their city not only politically, but also commercially, free was worthy of trial as a means of outstripping their neighboring rivals and attracting international commerce generally.

The special objects which they sought to obtain were, doubtless, freedom from taxation on imports which were to be consumed by the inhabitants of

the actual free district; freedom from customs duties, expenses, and formalities for such other imports as were to be stored here and reexported; the creation of manufacturing industries, which could obtain free raw material, machinery, etc.; the making of Hamburg eventually a great distributing center and international exchange; the increase of its import and export trade, as a result of these features; the similar increase of its shipping. Everything else was done incidentally to make this an attractive port and market.

In the eleventh and twelfth centuries, importers and dealers were compelled to have large public sales at stated periods of the year. These regular fairs were held in order to advertise the city and to attract buyers. There were no customs duties on importations, but the Hamburg government compelled the master of the vessel and the owner of the goods brought in to declare their approximate value, and on this value a small tax was levied for the maintenance of a navy to protect the commercial fleet against pirates.

So much for the special objects originally sought to be obtained. What were those intended by the radical change in 1888? Had Hamburg been undisturbed by the rest of Germany, it would probably have remained content for a long time to let well enough alone, and to have retained the traditional freedom of its city. But, when it became necessary, under the heavy pressure brought to bear by the press and the government at Berlin for it to enter the German customs union, it became a question of contending for as many of the old advantages as possible. It agreed, under such pressure, that its inhabitants should pay duties on imports for consumption, like the rest of their fellow countrymen; but it demanded the continued exemption for those that were not to be consumed. Manufacturing industries were still to receive the benefits of such an exemption, or to be protected for a period of years, until they could wind up their affairs. On the basis of these conditions, an agreement was reached between the local and imperial governments, by which a limited district was set aside for a free port. The whole thing simply meant that the customs line around the original free port should now be shortened and drawn around this contracted district, and that the 800,000 inhabitants could no longer consume foreign goods without paying the regular imperial imposts.

Fortunately for the city it was governed by men who had had intimate personal experience, either directly or indirectly, with commercial matters, and who were capable of forming sound estimates and acting upon them. Their ability was nowhere better evidenced than in the smoothness and rapidity with which the whole condition of things here was so successfully transformed.

Those at the head of affairs were quick to realize that their city had been deprived of advantages in certain directions, and they determined to compensate for these in others. If the people had to pay duty on articles imported for consumption, these imports would naturally decrease. Hence,

other imports must be made to come in, and, for this purpose, the inducements offered to shippers all over the world to send their goods here for storage, for awaiting better markets and for subsequent distribution, were increased. Everything in what may be termed the new free port was built with this object in view, and on a most liberal scale, and was made as attractive as possible for the purposes intended. The result was a concentrated succession of harbors, canals, piers, warehouses, etc., combining all the modern improvements and facilities, and together forming a harbor which, regardless of the question of exemption from customs taxation, might be used with advantage as a model by many of our younger growing seaports.

CONSTRUCTION OF THE NEW FREE PORT.

The work of construction of all the new ports, warehouses, quays, bridges, etc., was superintended and supervised by a committee, composed of members of the senate and of the Bürgerschaft.

Beginning at the Kehrwieder bridge, the boundary runs along the inner harbor and customs canal to St. Annen, where it takes a southerly, and then southwesterly direction until it reaches the Brookthor harbor. This it crosses and passes behind the Magdeburg quay, whence it runs along the Venlo-Hamburg Railway embankment until it reaches the River Elbe. It crosses this directly under the great Elbe railway bridge, and again runs along the railway embankment to a point where the Harburg highroad crosses it. For three-fourths of a mile it runs along this highway, then branches off and passes to the Reiherstieg, a small tributary of the Elbe, crosses this and then runs in a southerly direction and zigzag fashion for about half a mile to a corner of the frontier between Hamburg and Prussian territory, from where it passes in a northwesterly direction along the Ross dike to a dike running along the so-called Schuttenhafen. Then it passes along the latter dike in a northerly course to the River Elbe, runs around the floating palisades which inclose the shipbuilding yards of Blohm & Voss and Jansen & Schmilinsky, crosses the river in a northeasterly direction to the western end of another row of floating palisades, along which it runs to the starting point at the Kehrwieder bridge.

According to the local position and the character of the traffic at the different points of the boundary line, the manner of guarding the latter varies considerably. In the south, on the Hamburg frontier, on the island of Wilhelmsburg, a ditch with boundary posts has been considered a sufficient safeguard. Along the Venlo Railway there is a wooden palisade, and at the Venlo station an iron fence. Wherever the line crosses the river or its tributaries or canals, it is guarded night and day by customs launches, of which from 12 to 15 are in use. From the Kehrwieder bridge to the western end of the lower harbor (Niederhafen), and in front of the shipbuilding yards of Blohm & Voss and Jansen & Schmilinsky, the line is marked off and guarded by huge wooden floating palisades, which are moored to dolphins. Those in front of the shipbuilding yards can be easily swung from their positions

whenever a launching is to take place. That part of the boundary which runs through the town on the south side of the customs canal (*Zoll canal*) is naturally most carefully guarded. From the Kehrwieider point to St. Annen one customs office adjoins the other, and under the corrugated iron roof of these buildings there is a passage for the customs officers doing patrol duty. To facilitate the control at night, the customs canal is, in its entire length, well provided with electric lights. The Hamburg custom-house has five subdivisions, namely, Jonas, Kehrweider, St. Annen, Ericus, and Entenwärder, and these again are divided up into twenty-nine separate custom-houses and dispatching offices, most of which are distributed along the customs boundary. Most of these offices are situated in special buildings, but quite a number of them, according to the requirements, are located in frame buildings erected upon floats, which are moored either to dolphins, boundary palisades, wharves, or quays. The latter mostly serve as dispatching and controlling offices for barges, river boats, tugs, launches, rowboats, etc. They are all provided with hand cranes, from the smallest to the largest sizes, with the necessary appliances for weighing, and are altogether properly equipped for the entry and dispatching of almost any kind of wares and merchandise. The offices on shore are also used for the dispatching of floating goods, but their principal work is confined to the entering of goods carried into the customs district by wagons or carts. Most of these buildings are constructed in such a manner as to provide them with large courtyards, having two entrances. The wagons, in the turn of their arrival, pass into one gate and out of the other, and thus all crowding is avoided.

The communication for vehicles between the city and points south of the Elbe, especially the city of Harburg, formerly consisted of a ferry, which crossed the river at the foot of the gas works on the Grosser Grasbrook, and then of a highroad which ran due south to Harburg. As the territory through which this road passed was, however, within the limits of the new free-port district, and was to be cut up for harbor purposes, it was necessary to establish a new mode of communication between the two cities which did not traverse the free-port district. This was accomplished by constructing a new highroad from a point just south of the Spree harbor, along the southern boundary of the free-port district, to the embankment of the Venlo Railway, and thence under this embankment to a point about one-third of a mile east of the same, and from there north to the river front. Here a bridge was constructed across the Elbe $38\frac{3}{4}$ feet wide and about 1,148 feet long. A short road connects this bridge with a second one, the Billhorner bridge, which spans the continuation of the customs canal and opens into the city. It will be seen that this was no small undertaking.

The River Elbe is navigable for the largest seagoing vessels as far up as the great Elbe bridge. Only quite recently, two of the Hamburg-American Line's largest steamers, drawing, respectively, 25 feet 6 inches and 26 feet 3 inches of water, reached the Baaken harbor. Beginning at the Elbe bridge, and going down the river, one first comes, on the right-hand side,

to the Kirchenpauer quay, with a length of 3,844 feet, and provided with storage sheds of 138,287½ square feet of storage surface. At a distance of about 300 feet from this quay, and along its entire length, there is a row of large dolphins, so that the quay itself, together with these dolphins, affords moorings for three rows of seagoing vessels, with a total length of about 11,480 feet. With a sharp turn to the right at the western end of the Kirchenpauer quay, one enters the Baaken harbor, which is bounded on the north by the Versmann quay and on the south by the Petersen quay, the former with a length of 4,474 feet and 229,621 square feet of covered storage sheds, the latter 4,184 feet long, with 318,368 square feet of covered storage sheds. The harbor is about 560 feet wide, and in its center has a row of dolphins, which, however, extends only half its length. These and the two quays afford moorings for a row of seagoing vessels about 13,000 feet long. This harbor is used exclusively for ocean steamers belonging to regular lines. The Petersen quay is rented by the city, in almost its entire length, to the Hamburg-American Line.

Passing out of the Baaken harbor, and leaving the gas works on the right, one arrives at the Strand harbor. The Strand quay which faces this harbor is 1,738 feet long and has three sheds, with a total storage surface of 104,710 square feet. It also has a row of dolphins in front of it. Again, turning to the right, one enters the Grasbrook harbor, bounded on the south by the Hübener quay, and on the north by the Dalmann quay, the former with a length of 2,100 feet and a storage surface of 136,885 square feet, the latter 2,902¾ feet long, with a storage surface of 153,427 square feet. Turning to the right around the western end of the Dalmann quay, one enters the Sandthor harbor, with the Kaiser quay on the south and the Sandthor quay on the north. The length of these quays is 3,411 and 3,339 feet, and their storage surface 154,872 and 137,880 square feet, respectively. The Strand, Grasbrook, and Sandthor harbors are all used by ocean steamers. The remaining harbors for seagoing vessels are on the other side of the river, and are all cut out of the solid bank of the river. With its entrance pointing to the Strand harbor, there is, first of all, the Petroleum harbor, with a length of 2,690 feet and a width of from 360 to 820 feet, which is surrounded by a dike and closed off at its entrance by a gate, and is intended for the exclusive use of vessels carrying petroleum. To the right of the Petroleum harbor is the India harbor, bounded by the Africa, India, and Australia quays, with respective lengths of 3,198, 492, and 2,296 feet. Next to this harbor is the Hansa harbor, bounded on the west by the Bremen shore, on the south by the Lübeck shore, and on the north by the O'Swald quay, the latter about 5,182 feet long. In the middle, this port is divided into two parts by a row of dolphins. The southern part accommodates river craft only, while the other is used by ocean steamers. To the northeast of the Hansa harbor is the last harbor for seagoing vessels, the Sailing Ship harbor, bounded on the southwest by the America quay, on the southeast by the Sailing Ship quay, and on the northeast by the Asia quay.

Their respective lengths are 4,900, 764¼, and 3,926 feet. The former has a storage area of 15,985 and the latter 18,190 square feet. The port itself has a width of 984 feet and two rows of dolphins, the same being used almost exclusively by sailing vessels.

The remaining harbors are the Spree, Saale, Moldau, Zoll, Haken, Magdeburg, Brookthor, and Inner and Lower harbors. These are intended solely for river and canal boats, barges, tugs, and smaller craft. Together, they present a very considerable water front, but, as will be shown further on, this is absolutely necessary, owing to the extensiveness of Hamburg's river and canal traffic with the interior of Germany, and even of Bohemia. Besides these smaller ports, the innumerable canals and other waterways traversing the city proper and the islands of Steinwärder and Kleiner Grasbrook, on the south side of the Elbe, afford additional shelter and moorings for large numbers of barges, lighters, and canal boats.

All the quays above described, as well as those running along the city water front on the northern bank of the river, are constructed of masonry, founded upon heavy piles.

There are railway tracks on all the quays, and behind all of the sheds, upon which coals and merchandise can be carried to the vessels' sides. Behind each row of sheds there runs a well-paved street for the transportation of wares by vehicles. This mode of transportation has sometimes to be resorted to during the winter months, when the ice in the river becomes too thick to permit barges and lighters to pass through the same. The quays, without exception, are plentifully provided with steam cranes. Two systems, principally, are in use, viz, those that run upon tracks flush with the quay level and use steam generated from their own boilers, and those that derive their steam from a central station, and run upon an iron structure, the lower arms of which run on a track, flush with the quay level, and whose vertical arms rest and run upon a track under the roofs of the quay sheds. These latter are generally preferred, as they do not take away as much space on the quay walls.

The storage sheds, which are open in front, have fireproof brick side walls, but are otherwise constructed of heavy framework. At the back they can be thrown almost entirely open through a system of sliding corrugated iron doors. Their floors are raised 3 to 4 feet above the level of the quay walls.

Altogether these quays and their storage sheds are models of practicalness. They are strongly built, roomy, and accessible in every way, and afford the best possible means for the rapid loading and discharging of vessels.

It must be remembered that all the harbors referred to are open, and subject to the rise and fall of the tide, which at this comparatively remote distance from the ocean, is often quite considerable. In consequence, it was necessary to make the harbors rather deep. At mean low tide the principal depths are: Sandthor harbor, 18.37 feet; Grasbrook, Strand, Baaken, and Petroleum harbors, 19.68 feet; Sailing Ship, Hansa, and India harbors,

23.29 feet, and the smaller harbors—as Spree, Saale, Moldau, and Magdeburg—10.82 feet, so as to render them navigable for even the largest tugs.

To a considerable extent the storing of merchandise had to be transferred to the new free-port district, and the consequent problem of storing the more valuable articles of merchandise as much as possible on the right bank of the Elbe, easily accessible from the center of the city, and of plentifully supplying the warehouses with business offices, could only be solved by a complete remodeling of those densely populated parts of the city outside of the customs line (Kehrwieder, Brook, and St. Annen), and lying between the customs canal and the Sandthor harbor. This rebuilding, together with the construction of the customs canal, and the reconstruction of the quay street on the north of the canal, made the purchasing by the city of about 500 pieces of property, and the dislodging of about 17,000 inhabitants necessary.

The former narrow and shallow canal between the Upper and Inner harbors was transformed, as the northern boundary of the new free-port district, into the customs canal, with a width of 147½ feet, and along both banks of the same new, wide streets were constructed, of which the one within the free-port district—Kehrwieder-Brook (Neuer Wandrahm) runs to the west to the Kehrwieder Point, and to the east to the street called bei St. Annen, from where it branches off to the south until it connects with the street Sandthorquai. This latter street was widened very considerably.

For the further development of the territory inclosed by these streets, and disposable for the building of warehouses, it was necessary to take into consideration that the transportation of goods to and from the warehouses in Hamburg is principally effected by water, by means of flat barges (*Schuten*), with a carrying capacity of from 20 to 25 tons. All of the warehouses, therefore, had to have a water, as well as a street, front. While the older canals in the city which stand in direct communication with the Elbe, more or less run dry at low tide, the possibility of loaded barges and tugs passing through the new canals at all stages of the tide, was considered essential. These conditions led to the construction of a canal 82 feet wide, which cuts through the entire length of the warehouse district, and the bottom of which, like that of the customs canal, lies about 7.38 feet below mean low tide of the Elbe. Its western end forks into the customs-free Elbe on one side, and into the customs canal on the other, while the eastern flows into the customs-free part of the Brookthor harbor and again communicates through an arm, the “Kleines Fleth,” with the customs canal. It was not considered necessary to provide for the possibility of the direct landing of seagoing vessels, because these vessels but seldom bring cargoes for only one consignee and the goods are therefore assorted on board, or, after unloading, in the storage sheds on the quays, and from there directed to their several destinations.

Communication between the warehouse blocks themselves, and with the city, is effected by means of 14 bridges, one of which, the Jungfernbrücke, is intended only for pedestrians.

The warehouses constructed up to 1889 cover an area of 390,015 square feet. Since then, two new blocks, covering 69,550 square feet, have been built on the Neuer Wandrahm and the St. Annenufer, which, on the back, face the new Wandrahm canal. For a further extension of the free-port warehouse district on the north bank of the Elbe, only the eastern part of St. Annen remains. This part, surrounded by the Alter Wandrahm and the Holländische Brook, will, later on, be added to the free-port district.

The building of the greater part of the aforementioned warehouses was intrusted, under the supervision of the city building department, to the Hamburg Free Port Storage and Warehouse Company, a stock company specially organized for this purpose. To this company the building ground, prepared for building and encircled by quay walls by the city, was turned over on lease. The conditions under which this lease was effected will be referred to further on. In the same manner two wholesale wine merchants have each built a warehouse on the Kehrwieder. The city, for its own account, also built two warehouses, one of which, on the Kehrwieder, contains a post-office and a customs dispatch office, and the other, on the Sandthor quay, a central machine station, from which all the warehouses are furnished with steam heat, hydraulic power for windlasses, and elevators and electric current for the electric-light installations.

All of the blocks of warehouses built by the aforementioned stock company are designated by the letters of the alphabet. The dimensions, storage capacity, etc., of the various blocks and warehouses are given in the following compilation:

	Length.	Depth.	Built-up surface.	Storage space.	Office room.	Other space.
	<i>Feet.</i>	<i>Feet.</i>	<i>Sq. feet.</i>	<i>Sq. feet.</i>	<i>Sq. feet.</i>	<i>Sq. feet.</i>
Kehrwieder:						
Block A.....	203.3	91.8	18,650	115,560	9,590	5,240
Private warehouse.....	73.8	91.8	6,742	36,300	.....	588
Do.....	59	91.8	5,393	23,750	235	1,400
Block C.....	188.6	91.8	17,248	115,600	985	3,680
Block D.....	285.3	91.8 to 105	27,071	171,200	9,760	14,440
City warehouse.....	271.6	82	22,149	111,280	.....	24,790
Brook:						
Block E.....	659.2	55 to 105	49,804	310,300	16,960	31,275
Block G.....	459.2	55.7	25,680	141,240	22,500	14,870
Block H.....	.....	.....	24,396	62,810	71,880	35,160
Sandthor quay:						
Block I.....	310	91.8	31,000	212,395	620	4,825
Block K.....	229.6	91.8	20,972	142,310	450	3,690
Block L.....	577	91.5	52,537	341,010	7,030	19,820
City warehouse.....	121.4	91.5	11,021	40,450	.....	36,980
Block M.....	259.1	91.5	23,700	155,000	6,900	8,100
Block N.....	68.9	91.5	6,350	36,320	10,030	4,700
Block O.....	650	55 to 91.8	45,055	131,500	83,900	55,200
Administration building.....	50.8	38.4 to 54.5	2,140	.....	5,820	7,075

The warehouses are constructed (upon piles) of brick, with iron beams and wooden floorings. The outer walls and stairways are supposed to be fireproof. In order to avoid a bare and monotonous appearance, the designs

of the buildings were varied as much as possible, and the façades ornamented to as great an extent as the purpose of the buildings would permit.

It is, perhaps, important to mention that some years ago one of these large warehouses was destroyed by fire, and that afterwards it was found that its iron beams and girders had been so bent and twisted by the intense heat as to have made them a source of great danger to the adjoining buildings. In all the warehouses, therefore, which have since been built, it has been deemed advisable to substitute wood for iron as much as possible.

The ground floors of the warehouses are about 15 feet high, and are in most cases used as offices by the merchants who happen to use the rest, or part of the rest, of the building for the storage of their goods. Block O contains the coffee exchange and numerous offices, and is employed exclusively for the purpose of the coffee trade. The city's warehouse, at the corner of the Kehrwieder and Aufdem Sande, has a special feature in the shape of an iron lading tower (so called), which connects with each floor of the building by means of bridges. It allows the taking in and discharging of goods from and into vehicles without blocking up the entrances of the customs dispatch and post-offices, alluded to above.

The hydraulic station has four connected horizontal steam engines, with superficial condensation, each of which, at fifty-five revolutions per minute, furnishes 120 indicated horsepower, and two differential pumps, the plungers of which are coupled direct to the steam piston, and can supply 1,906 cubic feet of water of a pressure of fifty atmospheres per hour. This installation is capable of supplying the power for the working of two hundred and sixty windlasses and fifty elevators in the warehouses, and thirty-six cranes on the customs canal, including the necessary reserves. The water pipes are sunk rather deep into sandy soil to prevent the water from freezing during the cold season. Above ground they are encased in materials which are poor conductors of heat. As an additional safeguard, the whole pipe system is emptied every evening by means of a centrifugal pump. Most of the windlasses have a maximum raising power of 1,420 pounds, while some few raise as many as 1,980 to 2,860 pounds at a time. On the average, the elevators can raise a weight of 2,640 pounds. Besides the hydraulic windlasses, all the warehouses are fitted with hand windlasses, which are used at times when the former can not be operated, or in cases of emergency. Each building is supplied with an ingenious system of hydrants, for use in case of fire. From these, a mixture of water from the city mains and from the hydraulic station can be drawn at a pressure of from 8 to 10 atmospheres.

The following stationary cranes are worthy of note: On the Kaiser quay, a revolving steam crane of 21 ½ tons capacity; on the Dalmann quay, a hand crane capable of raising from 20 to 40 tons, and if greater weights than 20 tons are to be lifted by this crane, a counter-weight of 20 tons is used, as the quay wall was originally not strengthened for the crane foundations; on the Petersen quay, a revolving steam crane of 50 tons capacity, and on the Krahnhöft, next to the Sailing Ship harbor, one of 150 ton

power. The latter is probably one of the very largest in use in any port of the world. The projection from the edge of the quay wall to the center of the crane hook is 32.8 feet. The center of the crane pulley is 101.68 feet above the quay wall.

The electric current for the incandescent lights is measured by Aaron's electrometers, and is paid for by the respective tenants of the warehouses, while the cost of running the arc lights is borne entirely by the city. The central power station which furnishes this electric current, and the hydraulic power and steam heat, is also leased to and operated by the Free Port Storage and Warehouse Company.

Besides the warehouses described above, there are two large ones which were built before the annexation. One is situated at the western end of the Kaiser quay, and the other next to the custom-house in the Meyerstrasse. The former in operation since 1875, is surrounded by deep water, so that seagoing vessels can moor directly alongside of it. It covers an area of 38,840 square feet, and is divided into a cellar, a ground floor, and four lofts, which, together, have a storage surface of 203,000 square feet. It is supplied with eight cranes and four elevators, operated by hydraulic power furnished from a station in an extension. Four hydraulic cranes with a reach of 30 feet, are placed upon iron towers similar to the one in front of the city's warehouse, and described above. These cranes can raise a maximum weight of 3,300 pounds direct from a vessel's hold to either of the four lofts. In the court of a V-shaped building in the height of the fourth loft, there are four more hydraulic cranes, with a raising capacity of 1 ton each. Finally, there are four hand cranes of 1 ton capacity each on the iron towers next to the large hydraulic cranes, the chains of which unwind automatically. Three sets of railway tracks lead into the courtyard, of which the center one passes out through a tunnel to the extreme end of the quay. At the west front there is a high tower, and on its top a time ball which is dropped daily at noon (Greenwich time) by means of an electric apparatus worked from the observatory. On all four of its sides the tower has dials, the hands of which indicate the height of the tide in meters and centimeters.

The warehouse in the Meyerstrasse, called the "Silospeicher," was formerly used partly as a grain elevator, but in 1884 it was reconstructed and in its entirety changed into a warehouse. It has a total storage surface of 117,914 square feet, and nine friction windlasses run by gas engines. In 1890, it was purchased by the city. The administration of this and the warehouse on the Kaiser quay was until recently carried on by the city quay administration. They are now leased to the Free Port Storage and Warehouse Company. As its name would imply, this department has the control and management of Hamburg's quays and quay sheds. There is one exception, the Petersen quay. This, as has been stated, is leased by the quay administration to the Hamburg American Line, which company furnishes its own officials, engineers, and laborers.

The tariff of fees charged by the Free Port Storage and Warehouse Company is as follows:

- (1) A ground tax of 2.86 cents per 10.76 square feet of storage surface per annum.
- (2) A tax of 1.66 cents per 220 pounds of merchandise deposited in the warehouses. This tax includes the raising and lowering of the goods to or from any floor.
- (3) For weights which can be proved to have been withheld, five times the tax mentioned under (2) can be imposed.

The fees for storage of the goods are from 1.43 to 7.14 cents per 220 pounds per month, according to the character of the same. The owner of the goods is obliged to keep an exact record of the weights of his goods, and this record is subject to the controlling by the company at any time.

I have understood that warehousing prices are cheaper in the free port of Hamburg than are those in ports like London, Liverpool, and New York. These charges are, however, in excess of those to be paid for storage in warehouses within the customs limits of the city, on account of the fact that the limited number of such warehouses in the free port has advanced their value; besides their location is more convenient for business purposes.

The Free Port Warehouse and Storage Company began its storage business on September 1, 1886. The weights of the goods stored from that day to the end of 1894 are as follows:

	Pounds.
1886 (from September 1 only).....	11,940,000
1887.....	41,800,000
1888.....	71,445,000
1889.....	175,230,000
1890.....	145,970,000
1891.....	190,300,000
1892.....	175,600,000
1893.....	195,250,000
1894.....	165,220,000

These figures do not include the weights of such goods as were stored in warehouses, floors, or smaller parts of which were let outright to merchants. The rents paid by the latter are according to special agreement.

Communication by water between the city, the quays, and the free-port district on the southern bank of the Elbe, is kept up night and day by a fleet of small, but powerful, ferry boats, which, however, do not carry vehicles. The difference of nearly 8 feet between the high and low tide in the river at Hamburg has made it necessary to construct floating landing stages for these ferry boats. Two designs are in use. One consists of empty petroleum barrels, lashed together by means of beams, with a wooden flooring on top; the other is of iron pontoons, the flooring of which is cemented. They are held in position by dolphins, to which they are attached by iron bands. Iron bridges lead from these landing stages to the top of the quay walls, their upper ends being fastened to the quay wall by means of hinges, while their lower ends rests upon wheels that run back and forth upon the top of the pontoon as it falls and rises with the water.

It will be remembered that in the treaty between Hamburg and the German Empire regarding the former's annexation to the customs union, it was expressly stipulated that all retail trade within the limits of the free-port district should be prohibited. This, of course, also applied to the selling of articles of food and drink, and therefore no restaurants or eating houses could be permitted there. As this would have been a great hardship for the thousands of persons occupied during the day within the free port, who would thus be compelled in most cases to return to the city for their meals and refreshments, the government entered into an arrangement with the Society for Public Coffee and Dining Halls, by which the latter was to supply the wants of the laborers. The society built a number of coffee and dining halls, for which the city furnished the building ground and capital, receiving in return an annual rental from the society. A guaranty is given that only such wares as have been procured in the customs district, or upon which the duty has been paid, shall be consumed in these halls. There are seven or eight of these halls in the free-port district, where meals and beverages of good quality are served day and night to the laborers at very low prices. For instance, a bowl of coffee costs $1\frac{1}{4}$ cents; a bowl of chocolate, $2\frac{1}{2}$ cents; dinner, consisting of soup, meat and vegetables, $7\frac{1}{2}$ to 10 cents; a glass of beer, $2\frac{1}{2}$ cents. Spirituous liquors are not allowed to be sold. All the establishments are well patronized, showing that they fill an actual want.

It is only natural that the great number of merchants in Hamburg, and the large stocks of merchandise constantly carried by them, could not all be accommodated in the warehouse district of the free port, however large this district may be. There were hundreds of these merchants and wholesale dealers who chiefly deal in and export foreign-made goods to foreign countries, and who own, or have long-running contracts for, warehouses in the city within the new customs boundary. To avoid prejudicing their interests or otherwise compromising them, these people are permitted to continue to store dutiable goods upon which the duty has not yet been collected, in their private warehouses, under the following conditions:

Goods upon which the customs authorities have a claim can be stored in private warehouses, with or without the joint locking up of the customs authorities and the owner. These private warehouses are:

- (1) Transit warehouses, when the identity of each separate package is kept track of, and the goods stored are intended for consumption within the customs district, and at the same time those which are intended partly, or solely, for consumption in the foreign countries.

- (2) Division warehouses, when the identity of each separate package is not kept track of, regardless of the fact whether the goods stored are intended for consumption within the customs district, or are partially, or solely, for consumption in foreign countries.

- (3) Credit warehouses, when the goods are intended for consumption within the customs district, and are only stored for the purpose of securing the customs duty due or credited upon them.

Private warehouses are only allowed to parties who keep a proper set of commercial books, who enjoy the confidence of the customs authorities,

and who personally reside in the town where the warehouse is situated, or have residing there a duly accredited representative.

The space in these private warehouses must be arranged in such a manner that the goods can be stored separate and apart from other goods. In warehouses which are jointly locked by the customs authorities and owners, such a complete partitioning is necessary that no goods can be placed in or withdrawn from the storage space without the opening of the official lock, or the easily detected damaging of the inclosing partitions.

The official customs locking is done with special patent locks, which the customs authorities furnish at the expense of the warehouse owner. Private warehouses must, if under lock of the customs authorities, always be kept under the private lock of the warehouse keeper or owner.

The warehouse owner is responsible for the customs duties which rest upon the goods entered in a private warehouse, and, in cases of credit warehouses, in accordance with the weights of the goods at the time of their being received in the warehouse, and without regard to any diminution or damage which may arise during their storage through natural influences or accidental occurrences.

The same applies to transit and division warehouses not under lock of the customs authorities, as long as it is not proven that the duty has been paid at some other place, or that the goods have been entered at some other private warehouse, or finally, that they have been exported.

The examination of goods intended for entry in a private warehouse must, as a rule, take place at the respective custom-house from which their transportation to the private warehouse, under joint lock of the customs authorities must be controlled. The chief of the office may decide whether the dispatching can take place at any other place, and whether and how much the warehouse owner has to pay to the customs authorities for this concession.

For each transit and credit warehouse a special account is opened at the custom-house. The entry and writing off of the goods is done, (1) for transit warehouses under joint lock of the customs authorities, according to the gross weight, (the net weight is only entered if it has been ascertained); (2) for transit warehouses without the joint lock of the customs authorities; for division and credit, warehouses, according to the net weight, or, if the goods are dutiable on their gross weight, according to the gross weight. Goods which are dutiable by the piece, are entered and written off according to their number. The customs authorities may at any time make an examination of the warehouse.

The time during which private warehouses under joint lock of the customs authorities may be kept open, is determined by the customs office.

A fee, not exceeding 3 marks (71 cents) per officer per day, may be collected from the warehouse proprietor for watching the warehouses during the time they are open.

As a rule, goods may only be stored six months in credit warehouses. Exceptions can be made by authority of the customs office, but the extension of time granted must not go beyond the end of the calendar year.

Goods deposited in transit and division warehouses may generally be stored there for a period not exceeding five years. If goods which have been entered at transit warehouses at different times are packed into one package, the time of storage is figured from the day upon which the part which has been stored longest was entered. For division warehouses, the storage limit is controlled by writing off such goods as are to be withdrawn from the shipment which has been stored longest. Exceptions are also permitted in the cases of transit and division warehouses.

Transit warehouses, without the joint lock of the customs authorities, are permissible for goods which are subject to no higher duty than 3 marks (71 cents) per 100 kilograms (220 pounds); but the head finance authorities may permit this concession in exceptional cases for goods subject to no higher duty than 6 marks (\$1.42) per 100 kilograms.

The repacking, dividing, and treating of goods for the purposes of assorting, cleaning, and preserving them is permitted during the time of their storage; and even a further treatment of them may be permitted, provided this does not alter their character sufficiently to bring them under another heading of the tariff. If, in the repacking, packages of different number, kind, description, or weight are to be made, notice thereof must be given the customs authorities a day in advance.

The duties on such goods which have passed into the customs district for consumption are computed and paid twice a year (July and January). As long as a division warehouse is open, its entrance is constantly guarded by a customs officer who is at all times authorized to enter the warehouse.

Goods in a division warehouse which have become entirely spoiled or useless, are written off free of duty from the customs account, after they have been entirely destroyed under customs supervision.

Credit warehouses are, as a rule, not placed under joint lock of the authorities. Goods of any description may be deposited in them.

These warehouses within the customs district are nearly all situated on the city canals, which are in direct communication with the waterways of the port. Transportation to and from them is therefore cheap. Rents for them are not as high as for those in the free port. The fees charged by the customs authorities for the services of their officers are comparatively low. These advantages are regarded as outweighing the disadvantage of having one's goods under constant control of the customs authorities, and consequently these private warehouses are rather popular with many merchants.

RAILWAY FACILITIES.

In one respect, Hamburg is far behind other large cities of Europe, inasmuch as it possesses no central railway station. Its six depots are comparatively far apart, and communication among them by rail is maintained by rather circuitous routes. The loss of time thereby caused in the transfer

of merchandise from one station to the other has long been a source of regret to the commercial community, and notwithstanding the repeated pressure brought to bear upon the authorities toward an improvement of this state of affairs by many of the interested parties and the Chamber of Commerce in particular, the Hamburg Government has thus far been unable to arrive at a satisfactory arrangement with the Prussian Government, which owns and controls all but one of the lines of railway entering the city. However, notwithstanding this lack of proper railway facilities, Hamburg has done the best it could under the circumstances toward providing its free port with adequate and practical railway connections. As already mentioned, all the harbors, quays, and warehouse blocks are provided with systems of railway tracks. They are all built by Hamburg, connect with the main lines of the different railroads, and permit of the fairly prompt dispatching of goods by land.

Extending from the Magdeburg quay to the Ebe bridge, behind the sheds of the Versmann quay and on the territory between the Veddel canal and the Petroleum, India, and Hansa harbors, there are extensive track systems for forming trains of the freight cars which have been loaded or discharged at the various quays. The former serves for the traffic on the right bank of the Elbe, and the latter for that on the left bank. The management of this quay railway system is in the hands of the quay administration, while the rolling stock is supplied by the Prussian railway administration.

The Steinwärd and the Kleiner Grasbrook, on the southern bank of the Elbe, are about the only districts within the free port which can not be reached by rail. A necessity for railway terminal facilities there has not manifested itself. It is that part of the free-port district where the ship-building yards and the factories, manufacturing for the export trade, are situated, and is accessible from all quarters through a number of canals.

STORAGE AND WAREHOUSE COMPANY.

A most important part of the matters relating to the contraction of the Hamburg free port was the contract entered into by the city government and the Free Port Storage and Warehouse Company. Previous to the adoption of the general plan for the annexation of Hamburg, there was no question which attracted greater attention and more general public interest than that of deciding how the area of about 321,000 square feet, set aside for buildings for the storage of wares and merchandise on the Kehrwieder Brook, should be disposed of and built up. After long debates upon this question, it was finally decided to leave its solution to a special committee. This committee at once applied to private persons, corporations, and others directly interested in the question, requesting those who had offers or suggestions to make regarding the disposition of the building ground to submit them to the committee.

Among the numerous offers and suggestions received, there were three particularly that were given consideration, and of these the offer made by the North German Bank of Hamburg was finally chosen as the most accept-

able one, and, with some modifications, agreed to by the senate on October 30, 1884. Before the close of the year, the contract was ratified by the Bürgerschaft. The chief points of interest in this contract are the following:

The North German Bank in Hamburg agrees, under the following conditions, to found a joint-stock company, for the purpose of constructing and operating storage and warehouses, offices, and other buildings serving the purposes of commerce and manufacture, in the city part of the free-port district.

For this purpose, the finance department leases to the company, for the period of its existence, an area of 321,000 square feet, to be specified and set apart before the constitution of the company.

The capital stock of the company is fixed at 9,000,000 marks (\$2,142,000), divided into 9,000 shares of 1,000 marks (\$238) each. The right to increase this capital stock is reserved, in case greater sums should be necessary for construction and operation. The North German Bank guarantees the subscription to, and the payment of, the full capital stock of 9,000,000 marks (\$2,142,000).

As soon as possible after the constitution of the company, the territory mentioned above, with the appertaining quay walls and ready for building purposes, shall be turned over to the company in suitable periods. The construction of the public streets, sidewalks, sewers, gas and water mains, and railway tracks, is done by the government. For the settling of the question in which parts of the territory, and to what extent, general warehouses, storage space, offices, etc., are to be built, a general disposition plan is to be drawn up. The same is to be fixed upon by the company, with the approval of the senate, in accordance with the visible requirements of the entire commercial community. The special building plans and estimates of costs are to be submitted to the senate for its approval. The principle that not only present, but also the presumable future, wants shall be taken into consideration, shall govern all future constructions. The construction of all buildings is to be carried out in accordance with the approved building plans, and under supervision of the city building department.

The storing and manipulation of goods, and the letting of whole floors, is subject to a tariff, to be approved by the senate. An alteration of this tariff can at any time be demanded by the senate or proposed by the company. A general revision must be had every five years. The tariff charges are to be considered maximum charges, so that the company, if deemed advisable, may make lower ones.

The company has the right, and may be obliged by the senate, to issue transferable warrants for the goods stored with it, according to regulations approved by the senate.

The administration of the company is carried on by a board of managers. The board of directors consists of from five to nine members. The North German Bank will see that, at the first election, the members of this board shall be elected, as far as possible, from the circle of merchants still

actively engaged in commerce. The negotiations carried on in the meetings of the board shall be attended by three representatives of the public interests, which are to be selected by the senate from the various government departments. These representatives have no voting power, but the majority of those present at a meeting have the right to make independent motions, and to veto the measures adopted by the board. If the representatives of the authorities make use of this vetoing power the measure in question must, for the time being, be suspended, and the senate appealed to for a decision. The senate will then endeavor to mediate, or finally dispose of, the matter. In the same manner, a motion of the aforementioned representatives, which has been rejected, can be submitted to the senate for its final decision.

The resolutions of the general meeting of the shareholders, regarding the increasing of the capital stock, the issuing of bonds or other transactions amounting to a hypothecation of the company's assets, the alteration or amending of the statutes, as also the dissolution of the company, are subject to the senate's approval.

The basis upon which the division of profits rests is such that the shareholders on the one hand, and the government on the other, participate in the net profits of the undertaking in the proportion of 3 to 5. Beforehand, however, the shareholders shall receive from the net profits a dividend of $3\frac{1}{2}$ per cent per annum on the amounts paid in by them, but only after 5 per cent of the net profits have been turned over to the reserve fund, which fund is limited to 10 per cent of the capital stock. Then the government receives $\frac{2}{3}$ of the *præcipuum* thus divided among the shareholders. Two and one-half per cent of the profits are for a nominal salary for the board of directors, while 10 per cent go to the government. The other $87\frac{1}{2}$ per cent of the remaining profit is divided in such a manner that, first of all, the shareholders receive a super-dividend of $1\frac{1}{2}$ per cent on the amount paid in by them, and the government $\frac{2}{3}$ of the super-dividend thus paid to the shareholders. The remainder is divided, in the proportion of 3 to 5, between the shareholders and the government. (This last clause was subsequently changed, so that the remainder now goes entirely to the government.) During the time of construction, the respective payments made by the shareholders shall bear interest at the rate of $3\frac{1}{2}$ per cent per annum to the debit of construction account.

The profit which the government receives after the payment of $3\frac{1}{2}$ per cent dividend to the shareholders up to $\frac{2}{3}$ of this dividend is to be regarded as a rental for the territory turned over to the company. The further 10 per cent of the remaining profit, as well as the super-dividends accruing to the government, go to a fund for the purchasing of the company's shares. Annually, after the paying out of the year's profits, as many shares are drawn out by lot on July 1 as the balance of the purchasing fund will permit. The holders of the shares drawn out by lot receive, upon the surrender of their shares and dividend coupons, the nominal amount paid in upon the shares, plus 10 per cent of the amount paid in, and interest at 4 per cent per annum up to July 1 of the new fiscal year

The shares thus acquired for the purchasing fund remain fully privileged, and the finance department is obliged to represent them. The dividends falling to the shares of the purchasing fund go toward the strengthening of the purchasing fund.

The company pays taxes in accordance with the provisions of law.

After the close of the year 1899, the government is at any time privileged to purchase the shares remaining in private possession for twenty-five times the average profit of the last previous five years, but not below 110 per cent and not above 150 per cent, plus 4 per cent, per annum interest for the fiscal year that may have been begun.

The lease expires as soon as the government has gained possession of all the shares.

The remaining 10,720 square feet in the city part of the free-port district, which have not been leased to the company, remain at the government's disposal. The guaranty is, however, given to the company that, if the whole or a part of this area should be sold or leased to third parties, the government shall neither participate in the above described nor any other manner, but shall only turn over the territory at its actual value, to be fixed by the senate.

It had not been considered advisable to suddenly, and at a great expense, allow the government to become one of the largest warehouse owners of the world, nor to permit the control and management of such an extensive complexity of warehouses to pass entirely into the hands of private individuals. Therefore, this contract or agreement between the city government and a private corporation, whereby the supervision of the construction and operation of the warehouses, part of the benefit derived therefrom, and the possession of the territory upon which the buildings were erected were reserved to the former, and the administration and technical management of the entire storage and warehouse business was left to the latter, would appear to have been the best way out of the dilemma. Experience has since shown that it was a wise step. The interests of all parties concerned seem to be well served.

Since 1889, hardly a year after the annexation of the city proper to the customs union, the shareholders of the Free Port Storage and Warehouse Company have received their full annual dividends of 5 per cent, while the government has been deriving a good rental from the company and fair sums out of the net profits toward the swelling of its share-purchasing fund. Strictly speaking, the year 1889 was the company's first business year. Up to the year 1894, its net earnings were as follows:

Year.	Net earnings.	
	<i>Marks.</i>	
1889.....	1,046,687.78	\$249,111.69
1890.....	1,050,971.23	250,131.10
1891.....	1,050,401.20	249,995.44
1892.....	1,052,180.62	250,418.84
1893.....	1,052,667.25	250,534.75
1894.....	1,046,753.22	249,177.21

Between 1888 and 1890, 5,000,000 marks (\$1,190,000) worth of first mortgage bonds, and, in 1893, 1,000,000 marks (\$238,000) second mortgage bonds (with the privilege of 2,000,000 marks, or \$476,000 more) were issued by the company. The former bear $3\frac{3}{4}$ per cent, and the latter, 4 per cent interest. Up to 1894, 201,000 marks (\$47,838) of the first mortgage bonds have been paid off. The following figures will illustrate how the net profits (1,046,753.22 marks) of 1894 were distributed, in accordance with the agreement with the government:

	Marks.
5 per cent to the reserve fund.....	52,337.66
$3\frac{1}{2}$ per cent dividends to the stockholders.....	315,000.00
$\frac{1}{3}$ of this dividend to the government.....	525,000.00
Gratuity to board of directors.....	3,860.39
To government's purchasing fund.....	15,441.55
$1\frac{1}{2}$ super-dividend to stockholders.....	135,000.00
Remainder to government's purchasing fund.....	113.62
Total.....	1,046,753.22

COST AND DEFRAYMENT OF THE WORK.

In round figures, the reconstruction of Hamburg's free port, including all changes and innovations, and with the exception of the new warehouses, has cost, up to date, about \$30,940,000. According to the original estimate, approved in February, 1883, the cost was to be only \$25,228,000, but, as the limits of the contracted free port were twice extended subsequently to the treaty between Hamburg and the Empire, the amount had to be increased to \$30,940,000. It will be remembered that, according to the treaty, the Empire was to pay \$9,520,000 toward the costs, and that on the day of the annexation of the city proper to the customs union the regular duty had to be paid upon all dutiable articles, at that moment within the limits of the newly annexed district. The duties thus collected aggregated \$1,570.800, and, instead of going to the imperial treasury, they were turned over to that of Hamburg. Therefore, deducting this amount and the contribution of the Empire, there remained \$19,849,200 of costs to be paid by the little State of Hamburg. A public loan had to be made to meet these expenses. As provided, the Empire's contribution was paid in ten equal cash installments of \$952,000 each.

The general estimate of costs for the execution of the annexation of Hamburg to the German Customs District, as established by the Senate and Bürgerschaft in February, 1883, was as follows:

(1) Ground-tax value according to the taxation of 1880:

- (a) Of the territory on the Kehrweider-Wandrahm Island, necessary for the passage of the customs canal, including the waterway at the Neiderbaum and the southern quay street, as well as for the erection of warehouses, and of the eastern part of Ericus Island for customs purposes..... \$8,639,400.00
- (b) Of the territory necessary for the northern quay street from the Schaarthor bridge to the Messberg..... 1,785,000.00

- (2) Transformation of the canal leading through the city to the Inner harbor into a waterway within the customs district (customs canal), with a width 147.6 feet, and its bottom at +3.28 feet, including the reconstruction of the Brook and Kornhaus bridges; construction of a waterway through the Kehrweider Point, 65.6 to 84 feet wide, and its bottom also at +3.28 feet, together with the transferring of the ferry landing stages on the Niederbaum, and construction of a bridge in the continuation of the Niederbaum bridge; construction of a quay street on the north side of the customs canal, together with the reconstruction of the bridge over the Deichstrassen canal of the Hohe bridge, the small Mührenbridge and widening of the Mühren and Winser bridges; construction of a quay street on the south side of the customs canal from the Niederbaum passage to the Wandrahm bridge in a width in front of the free-port warehouses of 72.16 feet, 23 feet of which are taken up by the dispatching sheds; a bridge on the Kehrweider over the mouth of the Niederbaum passage; preparing for building and paving of the island between the Niederbaum bridge and the Niederbaum passage; construction of a bridge over the 44-foot wide transverse canal at the Kannengiesserort and over the canal at the Holländische Reihe, building costs: *

(a) Customs canal up to the Niederbaum, including passage and bridges.....	\$1,251,880.00
(b) Northern quay street, including bridges.....	321,300.00
(c) Quay street in the free-port district and along the Wandrahm and square at the Niederbaum bridge....	140,420.00
	<hr/> \$1,713,600.00

- (3) Construction of a canal in the free-port district of the Kehrweider-Wandrahm Island, with mouths into the customs canal at the Kannengiesserort and into the Brookthor harbor, 84 feet wide, and its bottom at +3.28 feet; bridges across the free-port canal in the street Auf dem Sande, at the Neuerweg, and in the street Bei St. Annen; bridge over the transverse canal at the Neuerweg and bridge across the mouth of the free-port canal into the Brookthor harbor; preparing for building and paving a street 49.2 feet wide between the Kibbeltwiete and Brookthor; construction of a landing stage and connection at St. Annen, together with repaving of the open space at the Niederbaum and of the Sandthor quay and connection of the street Auf dem Sande; connection of the Neuerweg with the southern quay street and quay street 39.36 feet wide between St. Annen and the Brookthor quay building costs: *

(a) Canals and bridges.....	999,600.00
(b) Streets and squares.....	214,200.00
	<hr/> 1,213,800.00

* The expropriations are included in item No. 1.

(4) Construction of high storage and warehouses with 160,500 square feet of storage surface (the water-front walls of the warehouses up to the level of the street are included in item No. 3), building costs*.....		\$1,285.200.00
(5) Widening of the Oberhafen canal at Daniel street by setting back the Stadtdeich for the purpose of gaining new landing places for barges, lighters, and river craft within the customs district, as also for the construction of a quay with steamboat landing stages for the Upper Elbe steamboats, in place of the obsolete landing stage at the Grasbrook, and the consequent necessity of moving the city water mains, including the purchasing of property:		
(a) Building costs for the setting back of the Stadtdeich and the landing stage of the Upper Elbe steamers.....	\$323,680.00	
(b) Expropriations therefor.....	452,200.00	
(c) Moving of the city water mains.....	33,320.00	
		809.200.00
(6) Gaining of new landing stages for barges, lighters, and river craft within the customs district and for the storing of lumber:		
(a) By the extension of the Bill harbor, including 500,000 marks expropriations.....	214,200.00	
(b) Dredging and piling of the Billwärder concave....	71,400.00	
		285,600.00
(7) Extension of the St. Pauli market place and landing stage up to the Altona frontier, including the purchasing of property.....		353,906.00
(This item was not included.)		
(8) Improvement of the Baaken harbor through dredging and construction of deep embankment foundations for a harbor for seagoing vessels; regulation and widening of the Baakenwärder, setting back of the bank on the Schumacherwärder and edging of the Baakenwärder, also on the river side with quay walls for the purpose of gaining greater quay lengths along deep water within the free district; sheds on the Baaken quay and on the north side of the Baakenwärder; bridging of the Magdeburg harbor:		
(a) Digging off and dredging the Baaken harbor to a depth of +7.54 feet in a length of 4,592 feet and a width of 410 to 459.2 feet, together with the improvement of the quay property; setting back of the bank on the Schumacherwärder, including covering of embankment.....	373,660.00	
(b) Quay walls at the Baaken harbor and on the river side of the Baakenwärder.....	1,504,160.00	
(c) Quay sheds on both sides of the Baaken harbor, including all cranes, railways, and streets, including the construction of the free-port street on the Baaken quay alongside of the railway depot of the Cologne-Minden Railroad up to the Meyerstrasse; construction of a quay building; revolving bridge across the Magdeburg harbor.....	1,253.070	
		3,130,890.00

* The expropriations are included in item No. 1.

- (9) Harbor constructions on the Veddel for the reception of the seagoing vessels to be removed from the lower port on account of the construction of the waterway through the customs district (customs canal and its continuations), as well as for the reception of the barges and lighters to be removed from the Baaken, Magdeburg, and Brookthor harbors, including the necessary canals, streets, and railways: *

(a) Sailing Ship harbor.—Digging out and dredging of the port to a depth of +7.54 feet, in a length of 3,116 feet and width of 525 to 885 feet and raising of the quay territory; edging of the corners of the harbor entrance with quay walls and edging of the sides of the harbor with walls with deep foundations and supplying them with loading bridges and construction of landing facilities there; construction of dolphins in the Sailing Ship harbor and construction of a quay wall on the river front from the Oberländer to the Sailing Ship harbors.....		\$1,004,502.80	
(b) Oberländer harbor.—Digging out and dredging the harbor to a depth of +3.28 feet in a width of 360 to 840 feet, supplying the same with dolphins; construction of a connecting canal between the Oberländer and Sailing Ship harbors, partly — feet and partly — feet wide and with a depth of +3.28 feet...		302,521.80	
(c) The streets and railways appurtenant thereto—streets along the Sailing Ship and Oberländer harbors beginning west of the railway tunnel and railways. .		150,178.00	\$1,457,202.60
<hr/>			
(10) Canals, streets, and railways up to the Reiherstieg:			
(a) Oberländer canal from the Oberländer harbor to the Reiherstieg 131 feet wide along the railway, otherwise, 197 feet wide, with a depth of +3.28 feet, including the ramming of piles for the same; construction of a canal to the east of the Reiherstieg, 131 feet wide and with the same depth as above, including a bridge across the Oberländer canal and the railway tracks.....		211,820.00	
(b) Construction of a street from the bridge over the Oberländer canal to the Reiherstieg, 23 feet width of pavement; construction of three bridges over the Oberländer canal and over the connecting canal between the Sailing Ship and Oberländer harbors for carrying over of the streets and tracks to the harbors; transferring of the Petroleum harbor railway, construction of switches and side tracks next to the government railway and construction of a simple depot there.....		108,052.00	319,872.00
<hr/>			
(11) Dredging in the river; purchase of two dredging machines with appurtenances:			
(a) Dredging in the river from the Grasbrook to the mouth of the Hofe passage at Rothenburgsort.....		611,422.00	

* The expropriations are included in item 14.

(b) Cost of two dredging machines with appurtenances, deducting one-third of their value after the completion of the work.....		\$228,480.00	\$839,902.00
(12) Transferring of the Harburg highroad from the pathway south of the Ernst August canal to the Sieldeich, in a width of 47.56 feet, with a pathway 7.22 feet wide and a driveway 19.68 feet wide; bridging of the Ernst August canal, widening of the Sieldeich, continuation of this street to the Elbe; construction of a new Elbe bridge to carry over this new street within the customs district, with a driveway 23 feet wide and two pathways each 4.92 feet wide, the foundations of the pillars, up to the level of low tide, being made large enough to permit of the widening of the bridge, when found necessary, the spans being of the same width as those of the bridge lower down; continuation of the above-mentioned street from the bridge to the Venlo Railway, cutting through under the railway embankment there and continuation alongside the Baaken quay in a width of 55.8 feet, with a pathway 9.84 feet wide and a driveway 23 feet wide up to the Meyerstrasse; the purchasing of property on Wilhelmsburg, valued at \$9,424.80.....			761,600.00
(13) Buildings, etc., for the securing of the customs boundary, customs buildings, and dispatch offices, not including the purchase of territory for customs buildings on the warehouse island, which is included in item 1:			
(a) An iron railing with two securable gateways between the waterway leading to the city and that part of the lower harbor which remains in the free district; an iron railing with two securable gateways between the waterway west of the Fähr canal and the Elbe; securing the customs boundary along the north side of the free-harbor canal and the transverse canal from the Brookthor quay to the Kannengiessersort by means of a wall or a close iron railing; wooden palisades along the Magdeburg and Baaken quays up to the Elbe bridge and on the left bank of the river.....		126,140.00	
(b) A large building for the customs authorities, various customs buildings (in different parts of the city and on the market and landing places in St. Pauli), and an administration building for the officers of inland duties.....		295,120.00	
(c) Customs buildings and dispatching offices for the land and water traffic on the customs boundary of the northern free port district, from the Elbe bridge to the Brookthor, including the purchasing of property estimated at \$63,070.....		295,120.00	
(d) Customs buildings and dispatching offices for the land and water traffic on the customs boundary of the northern free-port district, from Gross Ericus to the Niederbaum.....		516,460.00	

(e) Customs buildings and dispatching offices for the land and water traffic on the northern and western customs boundary, from the Niederbaum to the Schauzengraben.....	\$171,360.00	
(f) Customs buildings and dispatching offices on the southern customs boundary (Reiherstieg, Ernst August canal and Kleine Veddel).....	23,800.00	\$1,428,000.00
(14) Removing the dwellings and retail mercantile establishments on the Steinwärdor and expropriation of the territory on the Veddel for harbor purposes.....		1,428,000.00
(15) Unforeseen expenses.....		130,733.40
Total.....		25,228,000.00

It is only natural that in an undertaking of this importance and magnitude, the estimates should not turn out correct or exact in every instance or item. In some few cases, the amounts actually expended were below the estimates, while in many others the limits of the estimates had to be overstepped. Some of the plans had to be extended, because during the course of construction many of the buildings, quays, harbors, waterways, etc., were found to be inadequate. The existing harbors, including those provided for in the estimate, were soon found to be too small to accommodate all the vessels. The new warehouses did not suffice for the storing of the large quantities of goods, and from year to year additions had to be made to meet the actual requirements of the shipping and commercial interests. The necessity of these innovations and additions to the original plans were directly due to the changes rendered necessary by the city's annexation, and therefore the expense caused by them must properly be included in the costs of the annexation of Hamburg and the contraction of its free-port limits. The principal additions and innovations referred to, and which, up to date, have materially helped to increase the originally estimated cost of the whole work to \$30,940,000, are the following: The lengthening and deepening of the Sailing Ship harbor, and supplying the same with solid quay walls throughout; the construction of sheds on the America quay; the deepening of the Baaken and Moldau harbors; the construction of the Baaken lock; the purchasing and fitting up of railway property back of the Baaken harbor; the construction of the Hansa and India harbors, together with the Africa, Australia, India, and Oswald quays, the Bremen and Lübeck shores; the construction of the Spree harbor, south of the Veddel canal; the construction of sheds at the Petersen quay and Kirchenpauer quay; the placing of a row of large dolphins in front of the Kirchenpauer quay; the construction of canals at the Kleine Veddel, on the southern bank of the Elbe; the construction of additional canals and streets on the Kleine Grasbrook; the expenses of the customs canal and the Baaken bridge above the estimates; the increasing of the size and general dimensions of various custom-houses and dispatching offices; the construction of various new railway tracks, connections, etc.; the construction of coffee and dining halls; the construction of a hall, with waiting rooms, for the embarkation and disembarkation of pas-

sengers on ocean steamers (this is the building where all emigrants sailing from Hamburg are inspected and examined previous to their embarkation); the purchasing of the Hamburg-American Line property and warehouse at the Jonas, at the foot of St. Pauli, on the north bank of the Elbe; the construction of three bridges for pedestrians in the warehouse district, and additional electric and hydraulic connections; the construction of a tunnel for pedestrians under the railway tracks at the Brookthor; the improving of the Brookthor lock; the construction of additional quay walls, steps, landing stages, etc., in the warehouse district; alterations in the streets north of the customs canal, not included in the original estimate; costs of the festivities attending the official opening of the new free-port district, etc.

It has been stated that the above-mentioned costs did not include those of building the warehouses on the Kehrwieder-Wandrahm island. These were defrayed by the Free Port Warehouse and Storage Company, and amounted to about \$3,286,000. As these warehouses, however, have not proved sufficient for the wants of the company, it was obliged to make arrangements for further storage facilities. Accordingly, it rented from the city a space back of the sheds on the Asia quay and facing the Moldau harbor, upon which it constructed three large storage sheds, at a cost of about \$200,000, the government warehouses on block J and the government warehouses at the end of the Kaiser quay and next to the custom-house in the Meyerstrasse. Besides, it leased for a period of fifty years the property bounded by the Neuer Wandrahm, the Kannengiesserort, the St. Annenufer, and Bei St. Annen on the Kehrwieder-Wandrahm island, upon which it constructed warehouse blocks, the costs of the greater part of which are included in the above amount of \$3,286,000. Altogether, the company's construction account shows an expenditure of about \$3,570,000, which amount was met by the sale of the \$2,142,000 shares of stock and by the issue of \$1,190,000 first-mortgage bonds, bearing $3\frac{3}{4}$ per cent interest and of \$238,000 second-mortgage bonds, bearing 4 per cent interest. Of the first-mortgage bonds, \$48,000 have been thus far paid off.

Adding the above amount of \$3,570,000 to the general costs of the free port, the total sum of \$34,510,000 is obtained as the entire cost of the whole undertaking. For a small state like Hamburg, though its capital, with some 620,000 inhabitants, is the principal port on the European continent, this was a large amount to expend within the comparatively short space of little more than twelve years. Through it, it certainly has provided for itself one of the finest ports in the world, with facilities and accommodations unsurpassed.

FREE-PORT REGULATIONS.

For customs purposes—of course, not politically—the free-port district of Hamburg is regarded and treated as a foreign country. Therefore all goods, whether dutiable under the tariff of the customs union or not, may pass into the same free from any molestation whatever, but as soon as they leave the same and pass into any part of the customs union, they become subject to a regular entry, and, if dutiable, under the tariff, to the payment of the pre-

scribed rate of duty. The declaring, entry, withdrawal, examination, controlling, etc., of these goods and the liquidation of the duties thereon are governed by the laws and regulations of the customs union, but, of course, the peculiar position caused by a territory exempt from customs duties and situated in the heart of a large seaport, about 100 miles from the ocean, has obliged the authorities to issue special laws and regulations for the purpose of meeting all emergencies, complications, and requirements that would not be likely to, or could not, arise at other points of the customs boundary. To give the voluminous customs union laws and regulations will not be necessary, as they do not directly govern the free port, but apply generally for all importations into the limits of the union. Moreover, they are contained in a volume entitled *Gesetze und Regulative betreffend den Zollanschluss Hamburgs* (Laws and Regulations regarding the Annexation of Hamburg to the Customs Union).

I think it will suffice for the clear and proper understanding of the customs administration of the free port, if the most important and pertinent points of the special regulations, as issued by the senate for the Hamburg custom-houses and their dependencies upon the occasion of the city's annexation, are stated. Some of these have since been changed, but the change has in most instances consisted only of a slight modification, or of a more lenient interpretation. These chief points are as follows, and, in following and studying them, it will be well to constantly keep in mind the geographical position of Hamburg and the Elbe down to its mouth at Cuxhaven, as well as the boundaries of the free-port district:

SECTION 1. The head customs offices at Hamburg and their dependencies have the authority of customs entry, as well as customs exit, offices.

SEC. 2. The customs port consists of that part of the river intended for the mooring of vessels from the Kuhwärder Point and from the Altona frontier to the customs boundary across the river at St. Pauli, that part of the Lower harbor belonging to the customs district, the Inner harbor, the customs canal, that part of the Brookthor harbor which is within the customs district, the Ericusgraben, the Upper harbor, and the Oberhafen canal.

SEC. 3. As far as exceptions are not made public by the head authorities, the head customs offices and their dependencies are vested with the authority to collect all customs duties, and to perform any and all acts connected with the dispatching, as prescribed by the customs laws.

SEC. 4. The office hours of the respective offices are fixed by the head office. With permission of the head office, dispatching both by day and night, outside of office hours, may be effected.

SEC. 5. Persons carrying dutiable or nondutiable goods, which are packed or wrapped up in such a manner as to render their nature unrecognizable, are only permitted to cross the customs boundary from the free port, whether doing so by land or by water, on a customs street or waterway, and must report at the frontier customs office. In the same manner goods intended for export, and the identity of which require official customs control, may only be carried into the free port upon a customs street or waterway. In seagoing vessels, these goods may pass the customs boundary at any time, but otherwise unless exceptions are permitted by the head bureau, only during the daytime. The daytime is fixed as follows: In January and December, from 7 a. m. to 6 p. m.; in February, October, and November, from 6 a. m. to 6 p. m.; in March, April, August, and September, from 5 a. m. to 8 p. m.; in May, June, and July, from 4 a. m. to 10 p. m.

SEC. 6. Goods arriving from any district outside of the customs union must be accompanied by shipping documents and general or special declarations. The former declaration (freight bill manifest), is required for shipments arriving by rail or by sea, and must contain the number of railway cars, or the name or number of the vessel, the name and address of the consignee; the number of packages, the kind of packing, marks and numbers, and the general description of the kind of goods; if arriving by rail, also the gross weight. Finally, the declaration must contain the assurance of the correctness of the statements contained therein, and the signature of the declarant. In the special declarations, which apply for all goods arriving in any other than the above-mentioned manner, the quantity and kind of the goods (if packed, for each parcel or package) must be given, according to their denomination in the tariff. If different goods subject to different rates of duty are packed together in one parcel, the quantity and net weight of each kind must be stated in the declaration.

SEC. 7. All declarations must be written in the German language. The declarations for articles arriving by post may be written in French or English.

SEC. 8. Single declaration blanks may be had, free of charge, from the customs offices. For large quantities, the cost of manufacture must be paid for.

SEC. 9. The declaration must be made by the person accompanying the goods, but may also be made by the consignee.

SEC. 10. Prior to the special examination of the goods, declarations may be altered or corrected. The declarations must contain the dutiable as well as the nondutiable goods. For goods upon which the duty does not exceed 9 marks (\$2.14) a verbal declaration is sufficient.

SEC. 11. This also applies to the baggage of travelers as long as the same contains no merchandise.

* * * * *

SEC. 16. If declarations are not handed in at the proper time, the goods are stored by the custom-house for account and risk of the interested parties.

SEC. 17. The dispatching of incoming and outgoing goods takes place at the official bureau, unless the head office, in special cases, permits the dispatching elsewhere.

SEC. 18. The customs examination is either a general or a special one. The former takes place according to the quantity, marks, and numbers, manner of packing and weight of the packages, without opening them. In the special examination, each package is opened for the purpose of ascertaining the quantity and kind of goods.

* * * * *

SEC. 30. The transportation of goods from one customs office to the other is done under official seal, or, when this is not practicable, under official escort. If the transportation is to take place by water and under seal, only such vessels may be used as have been approved by the head office.

SEC. 31. Under the following conditions, transportation companies may be permitted to attend to the transferring of such goods: They must give a bond, to be approved by the head office, and subject themselves to the payment of a fine in cases of contravention, or in case of irregularities on the part of their employees.

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SEC. 35. As a rule, no other fees besides the customs duties may be collected. Extra fees are only permitted when the examination or dispatching of goods takes place outside of a regular customs office or during the night time, or when an official escort is provided, or when a vessel has to be officially guarded. These fees are fixed by the head office to suit each special case.

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The regulations governing the customs treatment of vessels arriving from sea and destined for Hamburg, at the reporting station at Cuxhaven, and while they are proceeding up the river to Hamburg, are contained in the customs regulations for the Lower Elbe, and will be referred to later on.

SECTION 37. The vessels coming from sea and bound for the free port under the customs signals provided for in the provisions of the customs regulations for the Lower Elbe, are exempt from reporting and entry at the custom-house at the boundary of the free port, provided these vessels do not arrive under customs escort or seal, in which cases the provisions of section 38 apply.

SEC. 38. The dispatching of the vessels dispatched at Cuxhaven for the passage to the free port is attended to by the custom-house at the Jonas, and is called for by day through hoisting a ball at the topmast, and by night through the displaying of a red light. The dispatching is generally confined to an examination and the taking off of the seals, the ascertaining of the existence of those articles which were dispatched unsealed, and the surrender of the manifest. The vessel is then given her clearance papers. The master of the vessel is obliged to land the officers again at the place designated by them.

SEC. 39. The vessels bound for the customs district, either arriving under customs signals or which have reported to the custom-house at Cuxhaven or a revenue cutter, or have otherwise been dispatched under customs control, without entry at the custom-house in Cuxhaven are obliged, immediately after their arrival, to tie up at such place as the port authorities, with the approval of the customs authorities, may assign to them. Vessels which have been passed by the custom-house may only discharge their cargoes at places designated by the customs authorities. The changing of this landing place is only permitted with the consent of the customs authorities.

The dispatching of vessels bound for the customs port in front of St. Pauli is attended to by the custom-house at St. Pauli; those bound for other landing places of the customs port, are dispatched by the custom-house to which this landing place is assigned.

The master, or his duly authorized representative, must then promptly report at the proper custom-house and present the certificate of report (if he has received one) and the manifest or other customs documents. If the papers are not in the master's possession, because the vessel has arrived under customs escort, he must so notify the custom-house so that the latter can cause the escort to be relieved and the papers to be delivered.

Vessels without cargo, or in ballast, and fishing craft which are laden only with fresh products of the sea, are also obliged to comply with the provisions in the first section of this paragraph.

SEC. 40. Before the preliminary examination of the vessel has taken place, the same may not, without the permission of the customs authorities, tie up to the shore nor have any communication with the shore or other vessels, nor be boarded by any person excepting pilots or police officers on duty. Until the preliminary examination has been finished the vessels, arriving under customs signals, must allow them to stand.

SEC. 41. The customs authorities are authorized to occupy a vessel, immediately after her arrival, with customs officers.

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SEC. 67. Vessels which sail from the free port bound direct for sea are exempt from all customs formalities if they, on crossing the customs boundary and until they leave the customs district, display the customs signals provided in sections 7 to 10 of the customs regulations for the Lower Elbe. The competent head office may, if the permission is previously sought, allow such vessels to complete their cargo in the customs port.

SEC. 68. Vessels sailing from the free port bound direct for the sea, but without displaying the customs signals, must procure from the custom-house Fährkanal a permit directed to the custom-house at Cuxhaven.

SEC. 69. Goods intended for export by sea, the exporting of which must be proved, because they (1) are subject to customs or tax control, (2) are exported with the right to be reimported free of duty, or (3) are shipped to a foreign country with the right to a drawback or bounty, may only be laden by the master when they have previously been examined and dispatched by the customs authorities, and are accompanied by the necessary official documents with which they must correspond as to number of packages, manner of packing, and

kind, and as to the style of sealing. In exceptional cases the examination may, with the permission of the office dispatching the goods, be carried on board the vessel.

In the dispatching of goods intended for reentry in an inland port, the general provisions of the declaration certificate regulations apply; but, in such cases, duty-free goods do not need to be declared nor their weight ascertained.

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SEC. 71. The loading may only be done at a place approved or assigned by the customs authorities. The same is done under official supervision, and this fact must be certified to in the accompanying documents. Until its departure, the vessel must be kept under official seal or supervision.

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SEC. 73. Vessels which, on leaving the port in the direction of Cuxhaven, display the customs signals in accordance with the provisions of sections 7 to 10 of the customs regulations for the Lower Elbe, shall be considered as having proven the exportation of the cargo and are not required to report at the custom-house in Cuxhaven. In such cases, the official seals are taken off of such goods as are intended for a foreign port, immediately prior to the vessels sailing, while the seals are left on such goods as are intended for entry in another inland port.

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SEC. 80. Vessels which enter from the free port and are bound for the customs port of Hamburg, or for a point on the Lower Elbe, must report at the dispatching office at the Jonas or at the Fährkanal. The dispatching takes place at either of these offices, or at the dispatching office St. Pauli, to which the vessels may be obliged to proceed under escort.

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SEC. 82. Vessels bound for Altona, are to be officially escorted to the competent dispatching office.

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SEC. 84. Vessels coming from the customs port of Hamburg, or a point on the Lower Elbe and bound for the free port, which require dispatching outward, must call at the dispatching office St. Pauli. The dispatching is then either done there or at the office Fährkanal.

SEC. 85. Vessels coming from the free port and proceeding up the river must call at the dispatching office Entenwärder. The same regulation applies to vessels coming down the river and intending to enter the free port, provided they require dispatching outside.

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SEC. 93. The traffic of tugboats is subject to the general regulations; the head office, however, is authorized to release such vessels from reporting and dispatching when crossing the customs boundary from the free port, provided the owner and master of the vessel subject themselves to the following conditions:

(1) During the vessel's trips within the customs district it shall not, without the special consent of the customs authorities, carry any other articles than those necessary for the vessel and its crew during such trips.

(2) Persons convicted of offenses against the revenue laws, or who, in the opinion of the head office are suspicious, are, upon the request of the latter, to be dismissed from such vessel at once.

(3) The special passport given for this purpose must always be on board, and shown to the customs officers when required.

(4) The head authorities may, regardless of who the guilty person may be, dictate and collect fines from the owner in case the revenue laws should in any way be transgressed against.

* * * * *

SEC. 95. Goods entering the customs district from the free port by rail, and which are free of duty, may be subjected to a special examination at the frontier when they are to be compared with the manifest, declaration, or railway bill of lading, provided the dispatching office is convinced that their examination can be properly carried out without unloading the cars.

Goods which can not be dispatched in this manner must either be examined in the free

port during the loading, and then be officially escorted to the boundary or provided with customs seals, or they must be passed over or transferred to the custom-house at the railway station from which they are to be sent off to their destination.

Dutiable bulk goods which are to enter in railway cars, can be dispatched for entry upon the strength of a declaration before they pass the boundary, provided their weight may be established in accordance with the regulations, and the character of the goods can, in the opinion of the dispatching office, be established without their being unloaded. Railway cars laden with such goods must be officially escorted to the frontier or kept under official seal.

* * * * *

SEC. 99. The dispatching of goods, the export of which must be proven under the regulations, and which are to be transported by rail without unloading into the free port, is done at the railway custom-house. The dispatching generally consists only in the examination and taking off of the seals, and the exportation is considered as proven as soon as the respective cars have been set in motion from the depot in the direction of the customs boundary at the free port. In case it should be necessary to ascertain the exact contents, the goods must be unloaded and taken into the custom-house premises for examination.

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SEC. 103. The dispatching of goods, which enter from the free port and are intended for a private storage or warehouse, is attended to at the entry office, or, at the option of the transporter, upon their entry at the warehouse.

SEC. 104. If the goods are intended for a warehouse kept under lock of the customs authorities, they must be dispatched under seal; if this is not possible, they must be escorted by a customs officer. If the goods are not intended for a warehouse kept under lock by the customs authorities, they are dispatched without seals and without an escort. The same regulations govern shipments from such private bonded warehouses to the free port.

* * * * *

SEC. 107. The shipments by post, deposited at the post-office in the free port, or received from foreign postal authorities and intended for shipment to, or in transit through the customs district, and the shipments by post transported from foreign countries through the customs district to the free port, are dispatched by the customs office connected with the aforementioned post-office, in accordance with the postal customs regulations. If shipments by post, which are in the post-office in the free port are to be finally dispatched at the dispatching office last above mentioned, their transportation to the head post-office is effected under joint lock of the customs and postal authorities.

SEC. 108. If goods are to be transported from one part of the free port to another through the customs district, they must be officially passed upon by the custom-house through which they enter the customs district, and be transferred, in accordance with sections 30 and 31, to the custom-house through which they again leave the customs district.

SEC. 109. The transportation of goods from one point in the customs district to another through the free port is subject to the provisions of the declaration certificate regulation.

Passenger steamers, which make regular trips from the customs district through the free port, can, if they land within the free port, be exempted from reporting and declaring goods which are to be reentered free of duty, provided the dutiable goods are kept under a secure customs lock. In such case the formalities are confined to the putting on and taking off of the customs locks: If such steamers do not land within the free port, they may be exempted from all customs formalities.

* * * * *

SEC. 111. Contraventions of these regulations are punishable with fines up to 150 marks (\$35.70).

SEC. 112. In all cases not covered by these special regulations, the regulations of the customs union are applicable.

LOWER ELBE CUSTOMS REGULATIONS.

SECTION I. The Lower Elbe constitutes the customs highroad for the ocean traffic, as well as for the traffic entering from the free port by water. Vessels carrying dutiable goods,

or such articles which are exempt from duty but are packed in such manner that their character can not at once be ascertained, may only cross the customs boundary from the sea in the marked off principal channel of the Elbe.

Besides those goods which are provided with a special covering for transportation or storage, all articles are to be regarded as packed, which are carried in covered vessels, or in such open vessels that their character can not be ascertained with certainty.

Fishing craft bringing in only fresh products of the sea, and vessels coming from German ports, may cross the customs boundary and enter the Elbe outside of the regular channel.

SEC. 2. Vessels are permitted to cross the customs boundaries at the free port and at the mouth of the river at all times of the day or night.

SEC. 3. Vessels crossing either of the above two boundaries, and laden with goods such as are described in the second paragraph of section 1, may only land at such points within the customs district of the Lower Elbe, as are allowed by the customs authorities. The discharging of the cargoes of such vessels is only allowed at certain points of the Lower Elbe, which points are assigned or approved by the customs authorities. [Another paragraph provides for such vessels that are obliged to complete or lighten their cargoes.]

In extreme cases of danger, the landing and discharging is permitted without consideration of the above regulations; in such emergencies, however, the fact must be reported at once to the nearest custom-house or revenue cutter.

SEC. 4. The whole Lower Elbe outside of the ports belongs to the boundary district.

On the banks of the Lower Elbe, nondutiable goods, if packed up, and dutiable goods may, without special permission of the customs authorities, only be loaded and discharged at such points as have been designated as landing places.

SEC. 5. For the purpose of the customs treatment of the incoming and outgoing ocean traffic, there is a subcustom-house at Cuxhaven, which, at the same time, serves as a reporting station for vessels coming in from sea. This office displays the customs flag of the Empire by day and three white lights at night.

SEC. 6. The customs treatment of the traffic of vessels and goods on the Lower Elbe is carried out in accordance with the general provisions of the customs union laws.

SEC. 7. Vessels crossing the customs boundary from the sea at Cuxhaven and bound for the free port or a customs port on the Lower Elbe, and also vessels departing from there for sea, if they carry with them a sworn pilot, are exempt from all customs formalities, provided they display during the whole trip the following customs signals: (1) During the daytime, *i. e.*, from sunrise to sundown, on the hind mast (generally at the gaff) or on the flag pole at the stern, a flag 5.25 feet long and 3.28 feet wide, diagonally divided into a black and a white half, so that the black half is below and next to the flag pole; and (2) at night two lights, the upper white and the lower green, at the same place where the customs flag is displayed during the daytime. Smaller vessels may also carry the lights between the hind mast and the shrouds. The lights must be so fastened that their light is not reflected toward the bow. If the national flag is to be shown at the same time, the customs flag must be placed under the same, but fastened to the same flag line. Vessels entering under customs signals, and bound for a customs port, must continue to display them until the completion of the preliminary examination.

SEC. 8. The following vessels are also exempt from all customs formalities, provided they display the signals described in section 7: (1) Lighters, into which goods are transferred for the purpose of lightening vessels on the Lower Elbe, provided the latter are displaying customs signals; (2) vessels which transfer goods or persons from the free port or the customs ports at Hamburg, Altona, or Harburg to a vessel under customs signals and bound for sea, during the latter's sojourn on the Lower Elbe; (3) in exceptional cases, other vessels by special permission of the head office.

The lighters must display the signals from the beginning of the lightening until they cross the customs boundary into the free port, or, if they are bound to the customs district, until the preliminary examination is finished.

The vessels mentioned under (2) must display the signals during the trip within the customs district, and after discharging, until they have crossed the customs boundary or have been examined and passed by customs officers; in the latter case, they receive a permit, which must be shown to the customs officers upon their demand during the continuing of their trip within the customs district.

An official escort of the lighters and tenders, and a controlling of the loading and unloading of the same, can in all cases be ordered.

The length of time that the vessels mentioned under (3) must display the signals is mentioned in the permit.

SEC. 9. Vessels under customs signals must always remain in the principal channel, and must continue their journey without unnecessary delay. With the exception of lightening or completing their cargo, the same must undergo no change. They must have no intercourse with the shore or with other vessels without special permission, but may accept the aid of tugs, and communicate with the shore and other vessels for the purpose of dispatching telegrams, or making reports to customs officers.

If other goods than those mentioned under (2) in section 8 are to be added to the cargo of such a vessel under customs signals, special permission therefor must first be obtained from the customs authorities. This permission is also necessary if the vessel is to call at a port of the Lower Elbe for the purpose of taking on board cargo or passengers.

As a general rule only customs officers, pilots, and police officers on duty are permitted to board or leave a vessel under customs signals. In exceptional cases, other persons may board or leave such vessel, if they are in possession of a passport from the customs authorities. In cases of accident or emergency, persons going to the vessel's assistance may board and leave the same.

Should circumstances arise under which the vessel would no longer be entitled to carry the customs signals, notice thereof must be given to the nearest custom-house or revenue cutter.

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SEC. 11. Vessels arriving from sea and entering without customs signals, must stop at the subcustom-house at Cuxhaven and there await the customs officers.

SEC. 12. Customs dispatching is done by this office at all hours of the day and night.

SEC. 13. The officers of this bureau can immediately give free pratique to such vessel if they are able to establish the fact beyond doubt that such vessel has a nondutiable cargo.

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SEC. 15. If the dispatching of the vessel is not to be done at Cuxhaven, but at some other customs frontier office, the hatches must be sealed or an official escort must be given the vessel.

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SEC. 17. Vessels coming from a port within the district of the customs union, and bound for another port within said district, can be passed by the suboffice at Cuxhaven without further formalities, provided the customs seals are found to be intact; or, if the vessel has been dispatched without seals, that the cargo tallies with the accompanying customs documents.

SEC. 18. If, on account of unfavorable weather the dispatching can not be done at Cuxhaven, the vessel may proceed up the river but is obliged to report to the first revenue cutter it meets. The latter will then dispatch her. Vessels of this kind must display a flag of the dimensions of the one described in section 7 and consisting of a white ground with black cross lines from corner to corner, or two lanterns one above the other, the upper one with a green light and the lower one with a white light.

* * * * *

SEC. 20. Vessels coming from a port within the district of the customs union and crossing the customs boundary through the Klotzenloch (the northern channel at the mouth of the Elbe), must also display the signals described in section 18 until they have reported to and been dispatched by a revenue cutter.

If the whole or part of a cargo of a vessel entering without customs signals is to be discharged on the Lower Elbe into lighters, the nearest custom-house or revenue cutter must be apprised of such intention. The transferring of the cargo is then done under customs supervision, and the hatches of each lighter are sealed, or the lighters are given customs escort.

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SEC. 27. Lighters which are to carry goods from the free port, or goods which have been passed by the custom-house to a vessel on the Lower Elbe bound for sea and carrying customs signals are exempt from all customs formalities, provided they also display the customs signals.

SEC. 28. The traffic of vessels on the Lower Elbe is watched by revenue cutters, the officers of which may at all times board vessels. These officers are authorized to inspect the vessel's papers, to make examinations, and to dispatch the vessels. They may also officially seal or occupy such vessels. The traffic of vessels on the Lower Elbe is also watched by the customs officers stationed along the banks of the river, and masters of vessels are also obliged to obey the orders of these officials.

SEC. 29. Vessels under customs signals are also subject to the provisions of section 28, and can also be sealed or provided with a customs escort if the suspicion exists that a contravention of the customs laws has taken place or is intended.

SEC. 30. In case a vessel is officially escorted, the master must provide the officer with a proper apartment and allow him to partake of the regular meals free of charge. No fees are to be paid for the escort or for his return transportation, except in the case mentioned in the third paragraph of section 15. (The case referred to is one where the customs office directs the hatches of a vessel to be sealed, but the master requests an official escort at his own expense instead). Fees may be collected in cases mentioned under (3) in section 8.

SEC. 31. Pilots are responsible that the vessels piloted by them do not on the way hoist or lower customs signals when it would be improper to do so. They must also seek to prevent, as far as possible, all contraventions against the customs laws which may come to their knowledge, and in all events report them.

SEC. 32. Contraventions against these regulations can be punished with fines not exceeding 150 marks (\$35.70.)

From these regulations and those referred to in connection with the private warehouses (described under the heading of construction, etc.), it will be seen that few, if any, embargoes are placed upon shipping and commerce, and that all possible facilities are given to vessels and their cargoes that are to avoid entering the customs port or other districts within the customs union. If they are intended for entry at such latter port or places, they are naturally subject to the customs laws of the Empire, and, perhaps, to such special regulations as the peculiar geographical position of Hamburg calls for. Situated, as it is, about 100 miles inland, all vessels coming from sea are obliged to pass through just that extent of customs territory before they can reach its free port. To avoid the complications that would be likely to arise from such a condition of affairs, the navigable channel of the Elbe had to be set aside as a sort of free passage from the sea to the free port, and *vice versa*, and this arrangement led to the issuing of the customs regulations for the Lower Elbe. They are enforced with the greatest possible leniency, so that traffic between the free port and the open sea, both inward and outward, is, in reality, not hampered in the least. A vessel coming from a foreign country and laden with dutiable goods from keel to deck, before entering the mouth of the River Elbe, hoists her customs signals, and after having received free pratique from the quarantine station at Cuxhaven (if

the vessel signals that she has no sickness on board, she is not even stopped), proceeds up the river and to her moorings in the free port without as much as being hailed by a customs officer. In the free port, she discharges her cargo, which, without the slightest customs formalities, can be transferred to the free-port warehouses, and after taking in a fresh and dutiable cargo and hoisting her customs signals, she again, without the slightest molestation from the customs authorities, can pass from the free port down the river to the sea. Should she, on her outward voyage, be bound for a port within the German customs union, her hatches are sealed prior to her sailing. Upon her arrival at her destination, the seals are removed by customs officers, and her cargo is entered in accordance with the laws and regulations of the customs union.

VESSEL CHARGES, EXEMPTIONS, ETC.

In coming to this point, I must again call attention to the fact that, though the limits of Hamburg's free port have been reduced since 1888, its character has remained the same. There were no charges to vessels for the use of the free port as such, and there are none at present. There is only a very small tax on merchandise entered at and exported from the free port, the so-called declaration tax, which amounts to 1 per mille of the declared value on all goods entered, and one-tenth per mille of the declared value on all goods exported. Transit goods are not subject to the declaration tax, but all goods have to be declared, and the blank used requires stamping. The stamp tax is $2\frac{3}{4}$ cents per declaration. The tax is therefore only a nominal one, and just about pays the expense of getting up the statistics compiled from the declarations.

Besides this tax, the regular harbor dues are charged, but these have absolutely no connection with the free port, but in character are about the same as those levied in any other port of the world. They are as follows:

Tonnage dues.—The tonnage dues for steamers entering the port of Hamburg are 2.86 cents per cubic meter* on foreign (British) measurement, or 2.38 cents per cubic meter on German measurement. The difference between the two computations, even for good-sized vessels, is a trifling one. In this connection, I would mention that British and most foreign measurements of steam vessels furnish a smaller tonnage than the German measurement, because, in the former, the space occupied by the engine, etc., is not included, while in the latter it is. For sailing vessels, the tonnage dues are 2.86 cents per cubic meter. Only half of these dues are charged to vessels which arrive in ballast and depart with a cargo, and to those which are laden only with lumber, kindling wood, empty bottles, cinders, chicory root, coke, coal, cement, roofing tiles, ice, oak bark, earth, slabs, gypsum, broken glass, herrings, charcoal, lime, limestone, bone black, chalk, empty jugs, kitchen salt, bricks, sea salt, sand, slate, cattle for slaughtering purposes, staves, stones, clay, common earthenware, peat, trass, tufa, or sugar scum. Vessels with a smaller tonnage than 120 cubic meters, and those entering and departing in ballast (for instance, for repairs), are exempt from all tonnage dues.

* 1 cubic meter = 35.316 cubic feet.

Clearing charges.—For clearing all vessels of a greater tonnage than 200 tons, both inward and outward, a fee of \$21.42 is charged.

Pilot dues.—These dues are collected without regard to the nature of the vessel's cargo, but according to her depth of draft. From the time the vessel enters the River Elbe, until she is moored in the port, she requires three pilots, or, at least, she is compelled to pay for their services. The first pilot takes her from the island of Heligoland to the Bösch pilot station, near Glückstadt, on the Elbe; the second, from the Bösch station to the port; and the third, from there to her moorings. The fees for the first class of pilots are as follows:

Depth of draft.	Summer tax.	Winter tax.
1 meter (3 feet 3 $\frac{1}{4}$ inches).....	\$5.95	\$8.33
2 meters (6 feet 6 $\frac{3}{4}$ inches).....	8.33	10.71
3 meters (9 feet 10 inches).....	10.71	15.47
4 meters (13 feet 1 inch).....	16.67	23.80
5 meters (16 feet 4 $\frac{1}{4}$ inches).....	27.37	36.89
6 meters (19 feet 8 $\frac{1}{4}$ inches).....	42.84	57.12
7 meters (22 feet 11 $\frac{1}{4}$ inches).....	58.31	78.54
8 meters (26 feet 3 inches).....	69.02	93.77
9 meters (29 feet 6 $\frac{1}{4}$ inches).....	76.16	104.48

These fees are figured according to a schedule for drafts from 1 to 9 meters, which rises by tenths of meters. Each part of one-tenth of a meter is counted as a full tenth. The minimum fee is \$5.95 in summer, and \$8.33 in winter. The summer season runs from April 1 to September 30; the winter season, from October 1 to March 31. The following discounts are allowed: Twenty-five per cent if vessels only proceed to Cuxhaven; 75 per cent if vessels can not obtain a pilot until they reach Cuxhaven; 50 per cent if vessels enter without cargo, or in ballast (as far as they only serve to give the vessel the necessary stability, the following articles are regarded as ballast, viz, sand, earth, building rubbish, rough stones, and water); 50 per cent if vessels sail from Cuxhaven; 10 per cent for each voyage, which the same vessel has made under the command of a Cuxhaven government pilot, after the twelfth voyage in a calendar year; 20 per cent for each voyage, which the same vessel has made under the command of a Cuxhaven government pilot, after the twenty-fourth voyage in a calendar year; 30 per cent for each voyage, which the same vessel has made under the command of a Cuxhaven government pilot after the thirty-sixth voyage in a calendar year.

An extra fee of 50 per cent may be charged when the government pilot is compelled to pilot the vessel to an Elbe port above Glückstadt. The fees for the pilots from the Bösch pilot station on the Elbe to the port of Hamburg, are 86 cents per German foot (16 feet American are equal to 17 feet German). If the river is full of drift ice, these pilots are obliged to transfer their station to Cuxhaven, and they are then entitled to charge double the above fee.

The harbor pilot receives a fee of \$2.38 per vessel.

Towage fees.—Towing is not under government control, but is done by private corporations and firms. The fees charged will be found in the sub-joined tables :

Summer tariff (April 1 to October 31) from the following stations to Hamburg and vice versa.

Registered tons.	Heligo-land.	Red buoy.	Cux-haven.	Glück-stadt.
450 to 600.....	\$121. 50	\$97. 20	\$72. 90	\$36. 45
601 to 750.....	133. 65	109. 35	85. 05	43. 74
751 to 900.....	145. 80	121. 50	97. 20	48. 60
901 to 1,050.....	157. 95	133. 65	109. 35	55. 89
1,051 to 1,200.....	170. 10	145. 80	121. 50	60. 75
1,201 to 1,350.....	182. 25	157. 95	133. 65	68. 04
1,351 to 1,500.....	194. 40	170. 10	145. 80	72. 90
1,501 to 1,750.....	218. 70	194. 40	170. 10	85. 05
1,751 to 2,000.....	243. 00	218. 70	194. 40	97. 20
2,001 to 2,250.....	267. 30	243. 00	218. 70	116. 64
2,251 to 2,500.....	291. 60	267. 30	243. 00	136. 08
2,501 to 2,750.....	315. 90	291. 60	267. 30	155. 52
2,751 to 3,000.....	340. 20	315. 90	291. 60	174. 96

NOTE.—If via Brunshausen or Glückstadt, \$12.15 extra ; if via Brunshausen and Glückstadt, \$24.30 extra.

Winter tariff (November 1 to March 31) from the following stations to Cuxhaven and vice versa.

Registered tons.	Heligo-land.	First light-ship.	Second light-ship.	Third light-ship.	Fourth light-ship.	Roads into har-bor.
300 to 450.....	\$60. 75	\$38. 88	\$36. 45	\$36. 45	\$31. 50	\$19. 44
451 to 600.....	72. 90	46. 80	43. 74	41. 31	38. 88	24. 30
601 to 750.....	85. 05	56. 52	48. 60	46. 17	43. 74	36. 45
751 to 900.....	97. 20	72. 90	65. 61	63. 18	60. 75	46. 80
901 to 1,050.....	109. 35	85. 05	72. 90	65. 61	63. 18	55. 89
1,051 to 1,200.....	121. 50	97. 20	85. 05	72. 90	65. 61	60. 75
1,201 to 1,350.....	133. 65	109. 35	97. 20	85. 05	72. 90	65. 61
1,351 to 1,500.....	145. 80	121. 50	109. 35	97. 20	85. 05	72. 90
1,501 to 2,000.....	170. 10	145. 80	121. 50	109. 35	97. 20	85. 05

Winter tariff from Cuxhaven to Hamburg or vice versa, and from Glückstadt to Hamburg and vice versa.

Registered tons	Cuxhaven to Ham-burg or vice versa.	Glückstadt to Ham-burg or vice versa.
300 to 450.....	\$23. 48	\$24. 67
451 to 600.....	120. 28	61. 96
601 to 750.....	127. 57	65. 61
751 to 900.....	138. 51	72. 90
901 to 1,050.....	145. 80	80. 19
1,051 to 1,200.....	164. 02	94. 77
1,201 to 1,350.....	182. 25	109. 35
1,351 to 1,500.....	218. 70	140. 94
1,501 to 1,700.....	243. 00	145. 80
1,701 to 1,850.....	267. 30	157. 95
1,851 to 2,000.....	291. 60	170. 10

NOTE.—If via Brunshausen or Glückstadt, \$24.30 extra ; if via Brunshausen and Glückstadt, \$43.74 extra

As soon as there is drift ice in the river, the towage is according to special agreement.

Towage in the port itself is always according to special agreement.

Quay dues.—The expenses for discharging on the quays are the following: The vessel pays 3.57 cents per cubic meter (35.316 cubic feet) German measurement, or 4.17 cents per cubic meter for foreign steamers and measurement. The latter vessels can, however, subject themselves to German measurement, and are then only chargeable at 3.57 cents per cubic meter on the tonnage thus obtained. The measuring fees are comparatively light, and will hardly exceed \$15 for the average steamer.

On the cargo, quay dues, amounting to 23.8 cents per 2,200 pounds are collected, of which the consignees return 7.14 cents per 2,200 pounds to the vessel.

Stevedores' and tally clerks' fees and lighterage.—These fees are not fixed, and are subject to special agreement.

Old and new dues.—The official harbor dues and charges to vessels have not been increased since the opening of the free port in its present state, but the transportation expenses for merchandise in the same have certainly grown. This has often been felt and complained of in commercial circles. The distances between the various harbors have become much greater, and, in consequence, the moving of goods calls for more time and greater expenses. Many of the barges and lighters, which, prior to 1888, when the port was not divided up into so many harbors at remote distances from the city, were poled along by hand, are now obliged to engage tugs to enable them to cover these distances within a reasonable time.

PRACTICAL RESULTS.

A very important and direct result of the entry of Hamburg into the German customs union in 1888 was the reconstruction of its entire harbor, which would otherwise have probably continued for many years in its old and somewhat obsolete condition. Only smaller innovations and improvements would have been risked. In the course of five years, enormous constructions were made. Sums were spent for that purpose that, otherwise, an economic administration would not have ventured to propose, and which the little commonwealth would have been slow to grant. Moreover, by the generous action of the state, private enterprise was called forth and eagerly partook in the great work of building up quite a little town of warehouses that were destined to shelter the large quantities of merchandise which it was confidently felt would find their way into the free port. The whole affair gave rise to a general condition of confidence and daring, official and private, for the universal feeling prevailed that the opportunity presented itself most favorably of providing for both the present and the future interests of the port.

The most important question, however, for the purposes of this report is as to how far the commerce of Hamburg has been actually benefited by its

free port. From the beginning of its existence up to 1888 its trade and population steadily increased, and it had grown to be one of the most important of the world's ports. That the value and importance of its trade is largely due to its original free-port advantages and attractions, there is scarcely a doubt. The very fact that it was one of a limited number of free ports in the world gained for it a special notoriety as such, and, besides attracting imports for consumption, it attracted those for storage. The tide of trade may be said to have turned naturally in this direction from the very first by reason of the absence of artificial hindrances.

But it must not be forgotten, on the other hand, that Hamburg has always possessed rare physical advantages for becoming an important commercial center, and that it was bound to become such in the course of time, with or without a free port. The answer, therefore, to the questions as to how far the free port and how far the natural conditions are responsible for the prosperity of the city are very hard to determine.

While the new free port has been open too short a time to estimate its effects with accuracy, it may be logically concluded that, if the original commercial freedom of the port were a benefit, the lessening of it in 1888 was to just that extent injurious to the actual trade itself. The vigor with which the change was opposed by the government and citizens of Hamburg, showed that they regarded it as a blow to their interests. It would seem best to concede that the rapid growth and prosperity of Hamburg have been due to a combination of the natural advantages and its free ports, old and new. The enterprise and business intelligence of its people, inherited through generations, is also by no means a small factor in the general result.

It may be interesting to mention in this connection that the cities of Altona, Königsberg, and Danzig are anxious to establish free ports. It has already been mentioned in the foregoing that the first of these formerly enjoyed free-port privileges along with Hamburg and Wandbeck.

Not only has Hamburg a fine harbor for seagoing vessels, especially since the harbors, piers, and warehouses of the new free port have been built, but it is here that the navigation of the Upper and the Lower Elbe meet. Here the river navigation, which is carried on entirely in numberless barges or lighters of all sizes, has to cease on account of the size of the river, the strength of the current, the rise and fall of the tides, etc.; and where the sea navigation, so to speak, commences. An examination of the statistics further on will show what an enormous amount of Hamburg's commerce goes up and comes down the Elbe in these craft.

One of the undoubted explanations of the more recent commercial increase lies in the removal of the customs barrier between the city proper of Hamburg and the rest of Germany. The result has been more enlarged commercial and industrial relations between the Empire and its greatest seaport. The German industries have not only won about 800,000 new consumers, but they have made themselves and their products so favorably known to the export merchants of Hamburg that the volume of business has

largely grown from this source. Hamburg has become the great door through which the German export is finding its way to the world's markets. There is no important manufacturer of Germany who has not a representative in Hamburg. The same may be said of Bohemia and other industrial provinces of Austria, and to some extent of Russia. These representatives are called export agents, and are the middlemen between the producer and the exporter. They have in their large and comfortable establishments continuous expositions of goods and samples of goods likely to be popular with buyers from beyond the sea. Since the German industries have gained so favorable a reputation through their quality, and especially their cheapness, Hamburg's export in German articles has greatly increased. The English marts and merchandise act and the similar recent United States law, which forbid German articles to deny their makers, instead of damaging German manufactured products, have given them notoriety in quarters where they had always passed as English goods. I have been told that this is nowhere more conspicuous than in the English possessions and settlements in Africa, while the ever-increasing lines of unusually fine steamers between Hamburg and both coasts of South America, Central America, and Mexico attest the tightening grip which this country is getting on trade in these dominions. The manufacturers of the United States, too, can testify to the fact that the title "made in Germany" is becoming almost as potent as an English title in its purchasing attractions.

Another very important result which was hoped for and realized from the entry of Hamburg into the customs union was the betterment of the condition of the middle classes—the shopkeepers, artisans, and other people who, under the isolated condition of the city, found it difficult to earn a living. It was felt that if the feature of the free port was retained even in a smaller degree, business in that direction would go on as it had done for hundreds of years. In fact, it was believed that the better accommodations offered to trade would largely help to remedy other drawbacks. It was believed, also, that the dropping of the customs barrier would permit to the middle classes a freer intercourse with the inhabitants of the neighboring towns and provinces. The latter can now come to Hamburg and make their purchases without the annoyance of custom-house officers on their return home. What the annexation of Hamburg to the customs district has accomplished in this direction can not be statistically proven, but it is generally admitted that the complaints of the middle classes have largely been silenced.

It may be interesting to insert here the translation of an extract from the report of the Hamburg Chamber of Commerce in 1889 regarding some of the consequences of the accession of this city to the tariff union:

DEVELOPMENT OF HAMBURG.

[Extract from the annual report of the Hamburg Chamber of Commerce for 1889.]

* * * * *

Now that more than a year has passed since Hamburg's annexation to the customs union, the question as to what influence the same has had upon the development of our city naturally

presents itself. The answer must necessarily be that Hamburg undoubtedly enjoys a rapidly progressing development, which is most clearly demonstrated by the facts that the tonnage of the seagoing vessels arrived, which last year showed an increase of over 400,000 tons, as compared with 1887, has in this year again increased nearly 500,000 tons, and that the increase in the traffic of merchandise on the quays, as the vessels were in many cases more fully loaded, has been a still greater one. How far this improvement may be directly attributed to the annexation of the customs union, and how far other influences were responsible for the same, is difficult to prove or estimate specifically.

An interdependence of the changes which have taken place in customs matters is in a general way quite perceptible in the extension of the jobbing trade and the smaller mercantile business having connections with the interior, as also in the increase of industrial activity in the annexed territory of our suburbs. In the latter respect, the advantages of our position as principal emporium of foreign raw products on the one hand and as principal outlet for the Elbe traffic on the other, are likely to more and more assert themselves. For the position of our city as a world's market, we can already now regard as an undisputed success the felicitous combination of preserving a traffic district free from customs duties and annexing the rest of the city, a combination for which the chamber of commerce at all times contended during the negotiations. Under the favor of these conditions which, among others, is also shown in the establishing here of many inland and foreign firms, our city is enabled to effectually aid the foreign trade of Germany in its endeavors to further increase, which trade constantly gains importance for its general commerce and for the greater part naturally passes through Hamburg. With a sense of gratitude, we also acknowledge the endeavors of the railways, especially the Royal Prussian Railway Administration, to encourage the German export trade and to direct the same as far as possible over German ports. Last, but not least, however, the improvement is due to the energy of our commercial community, which did not tarry in adapting its business arrangements to the altered conditions and recognizing the favorable conditions for our market in taking energetic steps toward increasing our traffic.

Unfavorable features have, however, also presented themselves with the annexation, among which we must particularly mention many increased difficulties in the local traffic and an increase in local expenses. It was only natural to suppose that the separation of the city's traffic through a customs boundary would cause disturbances and inconveniences, but it must not be overlooked that many of these unfavorable features are not exactly attributable to the annexation, but were partly unavoidable consequences of the increase of distances, occasioned by the increase of business, and of the temporary insufficiency of the accommodations for the traffic, which had suddenly gained such great proportions. But these difficulties play only a minor part in the entirety of the commercial affairs of our city, and it is therefore particularly gratifying that, thanks to the endeavors of all the authorities concerned and the arrangements of the private parties, many of the same have already now been removed, or at least considerably modified, and that a further improvement in this direction can be looked for, particularly through the extensive enlargement of our traffic accommodations, some of which are under construction and some in preparation. * * *

In looking for the causes of Hamburg's increasing mercantile importance, one is obliged to recognize the fruits which have grown from the seeds which it has always been the policy of Germany's statesmen and teachers to sow at home—for the cultivation of a fixed principle to be ever held in view by those emigrating from the Empire to seek their fortunes in other lands. It has always been the aim of those in authority to colonize German emigrants where the German tongue, the love of the Fatherland, the consumption of German products, and the continuous connection with German traditions, institutions, and interests could best be fostered and perpetuated. This extension of German influence throughout the world has

had a most perceptible effect upon German trade, and on none more than on that of Hamburg, than which there can scarcely exist a city more thoroughly given over to strictly business pursuits. There is also scarcely a city in the world where it is considered more important that young men should be sent out to foreign lands to learn foreign languages and foreign markets and methods of business. Many of these young men are sons of wealthy fathers here at the head of prosperous, old-established firms, who, it would seem, could well afford to remain at home and even to do nothing. But not so; they go abroad, rise by degrees from the lowest grades, and finally engage in business for themselves, very often not even the same kind of business their fathers conduct at home. It takes them a very short time to conclude that they can form just as favorable connections with firms in their native city as with those in London, New York, or Liverpool. Here they have left their friends, they know the general methods of business and the firms, they can correspond in their native tongue, and, above all, they are responding to the sentiment which was instilled into them at home—that every German in a foreign land owes his allegiance to the interests and advancement of the Fatherland.

It has been through just this process that many of the large trades and exchanges that were formerly monopolized by other cities must now be shared with Hamburg. In no article is this more notable than in that of coffee, for which Hamburg is now certainly the largest market in the world. This has also been an important port for the storage of American whisky, pending its subsequent reexportation. It is here also that the Austrian and German beet-root sugar is mostly stored, and so on with other articles.

Some of the disadvantages attending the transformation here in 1888 have been alluded to in the above report of the Chamber of Commerce. Among others may be mentioned the fact that the manufacturing industries which could not be removed to the new free port must be discontinued within a stated time, while the introduction of new ones within the exempted territory is actually not desired to any extent on account of the limited space.*

In fact, instead of being ready, as it was thought, to meet the new conditions in 1888, it will be seen from the foregoing that almost as great a construction has had to take place since; and it can only be a question of time as to when the 2,500 acres permitted by the treaty as a free port here will prove inadequate to the necessities. It may be well to mention here that the enforcement of the customs regulations and the guarding of the free port employs 1,700 persons, and entails an annual expense of \$715,000.

There exists here a permanent committee for examining and acting upon smuggling cases, from the judgment of which an appeal can be taken only to the Hamburg senate. Fines up to 1,000 marks (\$238) can be imposed, and the committee, which consists of an officer of the senate and two merchants, can entirely exclude offenders from the privileges of the free port.

*No manufacturing industries are allowed in the free port of Bremen.

All the property within the latter belongs to the city of Hamburg, which is therefore fully in a position to make all tenants comply with the regulations.

FREE PORTS IN THE UNITED STATES.

It is considered outside the province of this report to discuss the question as to whether the establishment of free ports within the United States would be likely to be attended with advantages to our commerce or not, or as to whether sections 8 and 9 of our Constitution would permit the same. The Department's instruction informs me that there is a bill pending in Congress for the establishment of such free ports, which means that the entire subject, from the standpoint of United States conditions and interests, will receive the merited consideration of our legislators. Nor is the writer familiar with the expenses attending the customs formalities in the United States, the bonded warehouse charges, the details of the bonded system, etc. It must be remembered that every bonded warehouse is practically a miniature free port in itself, and the general principles on which goods are entered and withdrawn are the same as those obtaining here for the free port. As far as I know, these bonded warehouses are not known in the interior, or elsewhere in Germany, except in the special cases in Hamburg already alluded to, and, perhaps, in similar instances in Bremen. Goods, except those in transit for a foreign country, must pay duty immediately on entry. This would certainly be very inconvenient in the United States, with the long distances from the seaboard of many of the places for which shipments are finally destined.

Is not, therefore, the system of bonded warehouses with us, while perhaps a little more expensive and a little less convenient in many ways, less of a discrimination in favor of a few special ports and against a large number of others than the system of free ports? Are free ports needed where bonded warehouses exist? Or, rather, could not the uses and privileges of our bonded warehouses be so extended as to embrace those which are offered by a free port like Hamburg?

As to which of our ports are most favorably situated, geographically or otherwise, for the purposes of the construction of free ports, the writer is unable to express an opinion, except to advance the general suggestion that the smaller the customs district that has to be passed by or through, before reaching the exempted district, the greater convenience and the fewer formalities and expenses will be the result. It would always be desirable that no further customs boundary should have to be crossed to enter and leave a free port than the actual narrow line surrounding the free port itself.

There are two noteworthy differences in the conditions that exist here and those that would obtain at any ports of the United States, which have a very important bearing on the cheaper and easier operation of the free port in Hamburg. In the first place, the actual surface area of the quays of the free port is apparently insufficient to meet the demands of vessels and merchandise entering and leaving this port. This would undoubtedly be the

case but for the large number of barges and lighters plying on the Upper Elbe and its tributaries from which cargoes are loaded into, and into which they are discharged from the larger vessels. These barges lie on one side of a ship which is loading or unloading, while on the other side lies the quay, so that the former really serve the purpose of so many floating quays that can be moved up to any ship and withdrawn at will. In our best harbors in the United States, no such traffic exists; nor could these small craft live in any but a closely landlocked harbor.

In the second place, it must not be forgotten that the old free port of Hamburg had existed for centuries before the changes of 1888, and that these changes, as a matter of fact, consisted simply in putting the city proper within the customs union, while the free port proper was left outside. It was merely a contraction and a removal elsewhere of the old free port. The entire traffic continued on as formerly, and everything was done to disturb this traffic as little as possible in the enforcement of the new conditions. It needs no assertion that the formation of an entirely new free port would be quite another matter. In such case, trade would have become accustomed to being subjected to altogether different treatment. That a free port possesses, in many ways, great conveniences and advantages for commerce, can safely be admitted as a general proposition; but circumstances alone will determine whether it would be beneficial for this or that special port. One thing can be said, however, and that is, that where a free port is to be established, the general principle of the construction and administration of the one at Hamburg can certainly be used as a safe and practical model.

In making this report, I am aware that data have been inserted that will, perhaps, be of little or no interest in the determination of the general question as to whether free ports in the United States would offer advantages to vessels and commerce or not. Should the question be decided in the negative, the report may still possess some interest as an ordinary commercial record, if nothing else. If, on the other hand, it should be decided to try the experiment which this city has tried with so much benefit, I feel sure that difficulties would constantly arise among the details of the establishment, construction, and regulation of the ports that could always be referred with advantage to the practice of Hamburg. At any rate, I have deemed it better to give too much detail rather than too little at the expense of clearness and comprehensiveness. It is quite possible that, owing to the difficulties under which the report has been prepared, I have omitted to touch upon, or to touch sufficiently upon, certain features of the subject upon which information is specially desired. I hope I need not say that, in such case, I hold myself in readiness to forward any further information wished for upon receipt of specific inquiries. I have not had the time to devote proper attention to the phraseology of the report, nor in some instances to the best arrangement of my facts and figures. In some cases, technical terms have had to be coined as necessities of translation from German into English. At the same time, I do not wish to convey the impression that the contents of

the report are not as reliable as a conscientious investigation and an appeal to the most authentic sources could render them.

MISCELLANEOUS STATISTICS.

Pro forma bill of a Hamburg ship broker.

D. to Messrs. John Dow & Co. Br. 2,400 Nett. 1,700 Reg. To. Drawing 22
Owner of the steamship *Lake City*. feet 11 $\frac{3}{8}$ inches inward, 16 feet outward.

Port charges and disbursements:

Disbursements at Cuxhaven.....	.....
Pilotage:	
From Heligoland to Bösch (winter tax).....	\$78.54
From Bösch to Hamburg (double fee on account of drift ice)....	39.56
In harbor (\$2.38), boatman (\$4.76).....	7.14
To lightship (outward) 16'.....	29.24
Customs lanterns (hire).....	1.43
Fee to harbor master.....	.....
Shifting vessel in harbor, pilot.....	2.38
Towage from Glückstadt to Hamburg as per agreement.....	200.00
Hooking vessels.....	.....
Tonnage dues at 2.86 cents per registered ton, net.....	48.62
Quay dues at 4.17 cents per 0.353 registered tons, net.....	200.82
Maritime police.....	.....
Clearing in and out at custom-house.....	21.42
Commission on inward freight.....	.....
Commission on outward freight.....	.....
Address commission.....	.....
Charter party.....	.....
Stevedores' account, inward only, as per agreement.....	510.00
Cargo books.....	.....
Tally clerks, inward only, as per agreement.....	55.60
Measurement fee.....	.....
Noting protest and translation.....	.....
Extending protest.....	.....
Surveyors examining hatchways.....	.....
Printed cards and postage.....	.....
Quay dues for discharging 660,000 pounds of cargo on quay, at 23.8 cents per 2,200 pounds (\$71.40), less 7.14 cents per 2,200 pounds returned by consignees (\$21.42).....	49.98
Advertisements.....	.....
Postage and telegrams.....	.....
Crane dues.....	.....
Water.....	.....
Dunnage wood.....	.....
Consul's fees.....	.....
Bill of health.....	.....
Consul's certificate to the same.....	.....
Bank commission.....	.....
Insurance.....	.....
Trams and petties.....	.....
Consul's shipping fees.....	.....
Law costs.....	.....

Port charges and disbursements—Continued.

Clearing ashes.....	.....
Agency charges on.....	.....

Total..... \$1,244.73

HAMBURG, January 7, 1894.

Population of the city of Hamburg.

Year.	Population.	Year.	Population.
1871.....	295,521	1883.....	439,666
1872.....	305,664	1884.....	450,944
1873.....	315,000	1885.....	467,468
1874.....	327,549	1886.....	477,938
1875.....	346,265	1887.....	492,518
1876.....	351,235	1888.....	516,070
1877.....	363,661	1889.....	540,495
1878.....	374,886	1890.....	544,454
1879.....	385,440	1891.....	569,260
1880.....	406,857	1892.....	584,416
1881.....	413,549	1893.....	581,608
1882.....	426,418	1894.....	604,545

Hamburg's imports since 1851.*

Year.	By sea	By rail and from Upper Elbe.	Total.
1851 to 1855†.....	\$72,000,674	\$36,747,676	\$108,748,350
1856 to 1860†.....	88,285,386	51,857,336	140,142,722
1861 to 1865†.....	110,020,736	61,003,922	171,024,658
1866 to 1870†.....	133,606,298	82,499,844	216,106,142
1871 to 1875†.....	211,307,634	124,088,678	335,396,312
1876 to 1880†.....	204,980,832	143,667,748	348,648,580
1881 to 1885†.....	225,359,106	197,099,458	422,458,564
1886 to 1890†.....	272,430,032	232,842,064	505,272,096
1880.....	212,896,236	188,716,388	401,612,624
1885.....	222,061,616	188,632,384	410,694,000
1886.....	222,963,636	192,734,780	415,698,416
1887.....	249,681,754	204,486,030	454,167,784
1888.....	265,347,628	216,595,032	481,942,660
1889.....	295,648,040	263,556,354	559,204,394
1890.....	327,708,864	286,836,886	614,545,750
1891.....	362,092,724	296,060,576	658,153,300
1892†.....	354,344,840	265,968,332	620,313,172
1893†.....	370,545,202	278,734,850	649,280,052
1894.....	372,721,804	258,267,270	630,989,074

* Bullion and coin not included.

† Average.

‡ Cholera years.

Value of imports.

Directions of origin.	Average from 1851 to 1860.	Average from 1861 to 1870.	Average from 1871 to 1880.	Average from 1881 to 1890.
<i>By sea.</i>				
From non-European countries.....	\$19,706,638	\$25,025,700	\$62,370,280	\$100,811,544
From Great Britain and Ireland.....	47,614,518	78,376,732	115,712,278	99,601,906
From the rest of Europe.....	11,262,874	18,410,728	33,060,818	48,482,742
Total.....	78,584,030	121,813,160	211,143,376	248,896,192
Bullion and coin.....	5,328,344	4,464,642	31,214,890	8,609,412
<i>By rail and from the Upper Elbe.</i>				
By Lübeck-Hamburg Railroad.....		3,298,184	13,322,688	12,047,560
By Berlin-Hamburg Railroad.....	36,360,688	55,272,644	72,473,618	75,076,544
By Venlo-Hamburg Railroad.....		27,280,040	27,280,040	68,067,306
From the Upper Elbe.....	7,666,694	13,160,916	21,811,510	65,783,914
Total.....	44,027,382	71,751,744	134,887,856	220,975,384
Bullion and coin.....	2,078,454	3,986,976	1,824,746	508,368
Grand total.....	130,018,210	202,016,522	378,070,868	478,989,296
Directions of origin.	1891.	1892.*	1893 *	1894.
<i>By sea.</i>				
From non-European countries.....	\$198,275,896	\$203,797,020	\$208,741,708	\$209,150,868
From Great Britain and Ireland.....	93,581,124	88,915,134	93,761,528	94,357,956
From the rest of Europe.....	70,235,466	61,710,210	68,023,490	69,212,542
Total.....	362,092,486	354,422,364	370,526,726	372,721,366
Bullion and coin.....	35,811,622	32,197,592	29,540,322	40,872,93
<i>By rail and from the Upper Elbe.</i>				
By Lübeck-Hamburg Railroad.....	13,777,344	11,656,526	11,839,072	10,298,974
By Berlin-Hamburg Railroad.....	96,825,396	93,836,498	98,223,790	84,195,404
By Venlo-Hamburg Railroad.....	79,379,902	79,305,170	81,849,862	72,920,106
From the Upper Elbe.....	106,074,458	81,169,900	86,811,828	90,855,548
Total.....	296,057,100	265,968,094	298,724,552	258,270,032
Bullion and coin.....	649,502	2,807,448	268,702	328,202
Grand total.....	694,610,710	655,395,498	679,060,302	672,192,530

* Cholera years.

Weight of imports.

Directions of origin.	Average from 1851 to 1860.	Average from 1861 to 1870.	Average from 1871 to 1880.	Average from 1881 to 1890.
<i>By sea.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
From non-European countries.....	257,729,120	277,161,180	1,078,322,520	2,264,899,340
From Great Britain and Ireland.....	1,136,770,580	1,700,629,920	2,989,082,800	3,932,904,580
From the rest of Europe.....	203,564,460	312,735,500	557,529,060	1,493,183,120
Total.....	1,598,064,160	2,390,526,600	4,624,934,380	7,690,987,040
Bullion and coin.....	146,520	150,480	485,760	102,520
<i>By rail and from the Upper Elbe.</i>				
By Lübeck-Hamburg Railroad.....		101,195,160	315,337,000	314,277,480
By Berlin-Hamburg Railroad.....	280,741,120	443,793,020	658,156,760	630,356,760
By Venlo-Hamburg Railroad.....			474,230,020	1,416,852,140
From the Upper Elbe.....	468,335,560	708,105,920	1,049,428,160	2,830,942,840
Total.....	749,076,680	1,253,094,100	2,479,151,940	5,192,429,220
Bullion and coin.....	84,700	185,240	83,820	14,300
Grand total.....	2,347,372,060	3,643,956,420	7,122,655,900	12,883,533,080
Directions of origin.	1891.	1892.*	1893.*	1894.
<i>By sea.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
From non-European countries.....	4,095,708,540	4,982,453,080	4,768,522,000	5,315,368,960
From Great Britain and Ireland.....	5,227,201,100	4,661,434,360	4,438,546,640	4,477,900,460
From the rest of Europe.....	2,612,505,940	2,435,815,580	2,884,824,580	3,401,036,560
Total.....	11,935,415,580	12,079,703,020	12,091,893,220	13,194,325,980
Bullion and coin.....	301,400	261,580	455,400	550,880
<i>By rail and from the Upper Elbe.</i>				
By Lübeck-Hamburg Railroad.....	340,053,780	298,642,960	292,087,180	286,705,320
By Berlin-Hamburg Railroad.....	908,573,160	851,001,140	879,228,020	730,056,800
By Venlo-Hamburg Railroad.....	2,170,553,660	2,311,220,340	2,460,796,020	2,539,375,300
From the Upper Elbe.....	4,232,174,760	3,280,066,460	3,768,530,700	4,111,854,120
Total.....	7,651,355,340	6,740,930,900	7,400,641,920	7,667,991,540
Bullion and coin.....	26,400	26,620	1,320	16,500
Grand total.....	19,587,098,720	18,820,922,120	19,492,991,860	20,862,884,900

* Cholera years.

Quantity and value of imports and exports.

Year.	Imports of merchandise by sea.		Exports of merchandise by sea.	
	Quantity.	Value.	Quantity.	Value.
	<i>Pounds.</i>		<i>Pounds.</i>	
1885.....	6,960,018,340	\$222,061,616	3,886,513,840	\$205,214,072
1886.....	7,145,946,500	222,963,636	4,036,231,100	208,563,922
1887.....	7,595,405,400	249,681,754	4,285,722,540	230,517,518
1888.....	8,545,729,280	265,347,628	4,717,443,720	243,136,278
1889.....	10,123,615,480	295,648,040	5,270,605,780	287,126,532
1890.....	11,015,326,520	327,708,864	5,527,124,900	299,993,050
1891.....	11,935,415,580	362,092,724	5,902,733,760	308,310,912
1892*.....	12,079,703,020	354,344,840	5,325,674,420	285,082,312
1893*.....	12,091,893,220	370,545,202	5,798,461,090	307,339,634
1894.....	13,194,325,980	372,721,804	6,043,444,660	289,072,162

Year.	Imports of merchandise by rail.		Imports of merchandise from Upper Elbe.	
	Quantity.	Value.	Quantity.	Value.
	<i>Pounds.</i>		<i>Pounds.</i>	
1885.....	2,084,664,340	\$131,283,904	2,773,817,640	\$57,348,480
1886.....	2,199,702,780	138,430,558	2,824,442,720	54,304,222
1887.....	2,307,926,940	146,951,434	2,854,872,900	57,534,596
1888.....	2,670,161,780	152,876,720	3,418,437,660	63,718,312
1889.....	2,970,087,780	185,278,192	3,266,219,880	78,278,162
1890.....	3,308,202,920	194,809,426	3,804,283,560	92,027,460
1891.....	3,419,180,600	189,986,118	4,232,174,760	106,074,458
1892*.....	3,460,864,440	184,798,432	3,280,066,460	81,169,900
1893*.....	3,642,111,220	191,922,962	3,768,530,700	86,811,928
1894.....	3,556,137,420	167,411,722	4,111,854,120	90,855,548

* Cholera years.

Hamburg's exports since 1851.*

Year.	By sea.	By rail and to Upper Elbe.	Total.
1851 to 1855†.....	\$47,343,910	\$49,043,470	\$96,387,380
1856 to 1860†.....	(†)	(†)	(†)
1861 to 1870†.....	(†)	(†)	(†)
1871 to 1880†.....	141,101,708	194,666,926	335,768,634
1881 to 1890†.....	233,576,294	191,794,680	425,370,974
1885.....	205,214,072	(†)	(†)
1886.....	208,563,922	(†)	(†)
1887.....	230,517,518	(†)	(†)
1888.....	243,136,278	(†)	(†)
1889.....	227,126,532	240,654,176	527,780,708
1890.....	299,993,050	248,826,696	548,819,746
1891.....	308,310,912	271,515,160	579,826,072
1892‡.....	285,082,312	265,583,050	550,665,362
1893‡.....	307,339,634	265,855,044	573,194,678
1894.....	289,072,162	270,621,708	559,693,870

* Bullion and coin not included.

† Average.

‡ Not ascertained, owing to lack of statistics.

§ Cholera years.

Value of exports.

Directions of destination.	Average from 1851 to 1855.	Average from 1872 to 1880 (estimated).	Average from 1881 to 1890 (estimated).
<i>By sea.</i>			
To non-European countries.....	\$18,441,906	(*)	(*)
To Great Britain and Ireland.....	19,576,452	(*)	(*)
To the rest of Europe.....	9,325,552	(*)	(*)
Total.....	47,343,910	\$142,101,708	\$233,576,294
Bullion and coin.....	4,720,254	19,773,754	4,350,878
<i>By rail and to Upper Elbe.</i>			
By Berlin-Hamburg railroad.....	40,003,992	(†)	(†)
To Upper Elbe.....	9,039,472	(†)	(†)
Total.....	49,043,470	194,666,926	191,794,680
Bullion and coin.....	979,132	7,919,944	991,984
Grand total.....	102,086,766	364,462,332	430,713,836
<hr/>			
Directions of destination.	1892.‡	1893.‡	1894.
<i>By sea.</i>			
To non-European countries.....	\$123,870,908	\$135,316,090	\$116,766,132
To Great Britain and Ireland.....	88,557,896	93,136,778	93,271,010
To the rest of Europe.....	72,652,832	78,886,528	79,034,812
Total.....	285,081,636	307,339,396	289,071,944
Bullion and coin.....	4,528,188	2,157,708	1,641,486
<i>By rail and to Upper Elbe.</i>			
By Lübeck-Hamburg railroad.....	18,816,558	19,047,140	20,213,578
By Berlin-Hamburg railroad.....	75,845,840	84,947,436	74,840,052
By Venlo-Hamburg railroad.....	59,880,324	61,981,626	53,064,242
To Upper Elbe.....	111,040,328	99,878,842	122,503,836
Total.....	265,583,050	265,855,044	270,621,708
Bullion and coin.....	3,698,524	384,370	.....
Grand total.....	558,891,398	575,736,518	561,335,138

NOTE.—From 1857 to 1872, the exports by sea were not ascertained. Owing to lack of statistics during this period, only the quantities of goods exported by rail and to the Upper Elbe were kept track of.

* For the exports by sea, only the total value has been ascertained.

† For the years 1871 to 1888, only the total values of the exports by rail and to the Upper Elbe have been ascertained.

‡ Cholera years.

Weight of exports.

Directions of destination.	Average from 1851 to 1855.	Average from 1856 to 1860.	Average from 1861 to 1870.	Average from 1871 to 1880.
<i>By sea.</i>				
To non-European countries.....	Pounds.* 127,744,980	Pounds.† (‡)	Pounds.† (‡)	Pounds.† 492,528,520
To Great Britain and Ireland.....	273,874,260	(‡)	(‡)	1,127,157,900
To the rest of Europe.....	156,569,820	(‡)	(‡)	520,861,560
Total.....	558,189,060	(‡)	(‡)	2,130,547,980
Bullion and coin.....	181,060	(‡)	(‡)	1,015,960
<i>By rail and from Upper Elbe.</i>				
By Lübeck-Hamburg Railroad.....			85,286,960	192,950,560
By Berlin-Hamburg Railroad.....	233,486,660	332,409,000	401,588,220	721,410,580
By Venlo-Hamburg Railroad.....				344,264,140
To the Upper Elbe.....	595,244,980	737,609,600	749,274,020	1,082,010,160
Total.....	828,731,640	1,070,108,600	1,236,149,200	2,340,635,440
Bullion and coin.....	49,280	146,740	145,860	362,560
Grand total.....	1,389,101,760	(‡)	(‡)	4,472,561,940
Directions of destination.	Average from 1881 to 1890.	1892.‡	1893.‡	1894.
<i>By sea.</i>				
To non-European countries.....	Pounds.† 1,544,098,820	Pounds.* 2,110,271,020	Pounds.* 2,401,269,200	Pounds.* 2,494,152,640
To Great Britain and Ireland.....	1,760,492,140	1,719,047,000	1,765,416,400	1,888,319,400
To the rest of Europe.....	1,095,711,320	1,496,356,400	1,631,776,300	1,660,971,620
Total.....	4,400,302,280	5,325,674,420	5,798,461,900	6,043,444,660
Bullion and coin.....	140,140	320,980	139,920	90,200
<i>By rail and from Upper Elbe.</i>				
By Lübeck-Hamburg Railroad.....	239,427,320	332,805,220	350,218,660	390,538,060
By Berlin-Hamburg Railroad.....	576,302,320	856,771,080	1,001,408,760	772,534,620
By Venlo-Hamburg Railroad.....	574,802,580	863,077,820	946,764,060	780,512,260
To the Upper Elbe.....	2,677,931,960	4,016,925,220	3,732,858,140	5,040,865,720
Total.....	4,068,464,180	6,069,579,340	6,031,239,620	6,984,450,660
Bullion and coin.....	45,100	36,520	27,500	
Grand total.....	8,468,951,700	11,395,611,260	11,829,878,940	13,027,985,520
* Net.	† Gross.	‡ Not ascertained.	§ Cholera years.	

Seagoing vessels arrived.

From—	Average from 1846 to 1850.		Average from 1851 to 1860.		Average from 1861 to 1870.		Average from 1871 to 1880.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
German ports, including Heligoland.....	924	32,251	1,312	77,145	1,418	120,101	1,254	114,330
Great Britain:								
Colliers.....	882	130,447	1,109	201,790	1,143	326,238	915	503,596
With other cargo.....	802	147,936	941	245,500	1,152	440,870	1,539	764,792
Rest of Europe.....	810	72,197	826	102,673	870	166,688	962	275,637
America.....	300	68,535	403	110,012	455	185,253	602	463,574
Africa.....	19	2,373	16	3,092	13	3,288	45	14,013
Asia and Australia.....	26	8,031	42	15,887	41	18,297	95	60,312
Total.....	3,763	461,770	4,649	756,099	5,092	1,260,675	5,502	2,206,254
With cargo.....	3,446	438,768	4,026	694,273	4,379	1,153,060	4,758	2,081,871
In ballast.....	317	23,002	623	61,826	713	107,615	744	124,383
Sailing vessels.....	3,347	336,575	3,720	457,639	3,379	493,868	2,648	516,331
Steamships.....	416	125,195	929	298,460	1,713	766,807	2,854	1,689,923
	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>
Sailing vessels.....	88.9	72.9	80	60.5	66.4	38.2	48.1	23.5
Steamships.....	11.1	27.1	20	39.5	33.6	60.8	51.9	76.5

From—	Average from 1881 to 1890.		1892.		1893.		1894.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
German ports, including Heligoland.....	1,625	232,916	2,321	402,419	2,516	481,023	2,811	529,274
Great Britain:								
Colliers.....	837	582,398	1,083	787,069	1,058	775,124	963	701,150
With other cargo.....	2,054	1,257,899	2,143	1,435,394	2,109	1,364,967	2,217	1,446,838
Rest of Europe.....	1,418	681,180	1,656	1,001,144	1,788	1,240,429	1,791	1,272,812
America.....	902	917,984	1,013	1,458,275	958	1,411,424	1,005	1,601,359
Africa.....	71	66,787	135	165,660	136	176,807	159	111,500
Asia and Australia.....	208	130,883	218	389,049	227	436,604	219	1,888
Total.....	7,015	3,870,047	8,569	5,639,010	8,792	5,886,378	9,165	6,228,821
With cargo.....	6,025	3,605,458	7,175	5,202,044	7,339	5,443,571	7,471	5,812,312
In ballast.....	990	264,589	1,394	435,966	1,453	442,807	1,694	416,509
Sailing vessels.....	2,414	611,546	2,441	659,529	2,393	597,953	2,662	647,506
Steamships.....	4,601	3,258,501	6,128	4,979,481	6,399	5,288,425	6,503	5,581,315
	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>
Sailing vessels.....	34.4	15.8	28.5	11.7	27.2	10.2	29	10.4
Steamships.....	65.6	84.2	71.5	88.3	72.8	89.8	71	89.6

Seagoing vessels cleared.

For—	Average from 1846 to 1850.		Average from 1851 to 1860.		Average from 1861 to 1870.		Average from 1871 to 1880.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
German ports, including								
Heligoland.....	1,306	54,496	1,360	61,437	1,251	77,613	1,072	91,853
Great Britain and Ireland...	1,525	271,956	2,064	463,675	2,387	804,911	2,660	1,372,314
The rest of Europe.....	622	66,679	750	103,853	912	179,341	1,036	290,318
America.....	262	56,623	416	107,922	457	168,688	604	389,450
Africa.....	22	3,361	18	4,231	22	5,122	70	21,697
Asia and Australia.....	22	6,958	44	15,137	56	20,105	71	42,128
Total.....	3,759	460,073	4,652	756,255	5,085	1,255,780	5,513	2,207,760
With cargo.....	2,071	283,008	2,674	479,733	3,105	822,983	3,810	1,526,118
In ballast.....	1,688	177,065	1,978	276,522	1,980	432,797	1,703	681,642
Sailing vessels.....	3,340	333,976	3,723	457,764	3,373	490,833	2,699	519,440
Steamships.....	419	126,097	929	298,491	1,712	764,947	2,854	1,688,320
	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>
Sailing vessels.....	88.9	72.6	80	60.5	66.3	39.1	48.2	23.5
Steamships.....	11.1	27.4	20	39.5	33.7	60.9	51.8	76.5

For—	Average from 1881 to 1890.		1892.		1893.		1894.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
German ports, including								
Heligoland.....	1,470	178,509	2,114	344,382	2,380	435,525	2,616	432,155
Great Britain and Ireland...	3,149	2,041,876	3,703	2,294,494	3,640	2,793,835	3,685	2,973,649
The rest of Europe.....	1,327	554,608	1,562	733,695	1,588	797,801	1,637	818,067
America.....	846	880,889	840	1,255,696	882	1,377,352	872	1,435,036
Africa.....	109	85,620	166	212,865	174	221,953	184	1,435,036
Asia and Australia.....	120	134,146	180	299,031	174	307,114	181	334,423
Total.....	7,021	3,875,648	8,565	5,640,163	8,838	5,933,580	9,175	6,248,875
With cargo.....	5,248	2,947,943	6,036	3,941,981	6,313	4,091,911	6,628	4,312,551
In ballast.....	1,773	927,705	2,529	1,698,182	2,525	1,841,669	2,547	1,926,324
Sailing vessels.....	2,418	612,135	2,424	638,083	2,401	606,451	2,685	665,901
Steamships.....	4,603	3,263,515	6,141	5,002,080	6,437	5,327,129	6,490	5,582,974
	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>
Sailing vessels.....	34.4	15.8	28.3	11.3	27.2	10.2	29.3	10.7
Steamships.....	65.6	84.2	71.7	88.7	72.8	89.8	70.7	89.3

River craft arrived from the Upper Elbe.

Description.	Average from 1846 to 1850.	Average from 1851 to 1860.	Average from 1861 to 1870.	Average from 1871 to 1880.
	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>
Sailing craft.....	4,109	3,839	3,813	3,561
Steamboats.....	80	131	575	1,511
Tow barges.....	80	218	578	921
Timber rafts.....	85	195	146	88
Total.....	4,354	4,383	5,112	6,081
Loaded.....	3,605	2,970	4,040	4,564
Empty.....	747	1,413	1,072	1,517
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Burden of loaded craft.....	265,613	281,246	431,673	600,950
Burden of empty craft.....	62,329	130,413	94,142	176,200
Total.....	327,942	411,659	525,785	777,150
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Quantity of merchandise.....	457,718,580	455,063,400	676,331,820	954,912,420

Description.	Average from 1881 to 1890.	1892.	1893.	1894.
	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>
Sailing craft.....	4,233	3,975	4,329	3,786
Steamboats.....	3,003	3,266	3,842	4,187
Tow barges.....	3,475	5,311	6,400	6,656
Timber rafts.....	72	66	76	47
Total.....	10,783	12,618	14,647	14,676
Loaded.....	8,926	8,802	10,815	9,447
Empty.....	2,157	3,816	3,832	5,229
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Burden of loaded craft.....	1,558,623	1,924,331	2,452,430	2,115,483
Burden of empty craft.....	330,518	701,441	717,999	1,112,245
Total.....	1,889,141	2,625,772	3,170,429	3,227,728
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Quantity of merchandise.....	2,819,707,000	3,372,228,200	3,869,103,480	4,233,523,900

River craft cleared for the Upper Elbe.

Description.	Average from 1846 to 1850.	Average from 1851 to 1860.	Average from 1861 to 1870.	Average from 1871 to 1880.
	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>
Sailing craft.....	3,876	3,869	3,842	3,569
Steamboats.....	80	129	575	1,507
Tow barges.....	81	226	570	907
Total.....	4,037	4,224	4,987	5,983
Loaded.....	3,473	3,432	3,989	4,853
Empty.....	564	792	998	1,130
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Burden of loaded craft.....	253,924	299,762	413,205	640,052
Burden of empty craft.....	31,314	63,698	78,408	119,625
Total.....	285,238	363,460	491,613	759,677
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Quantity of merchandise.....	549,631,060	675,660,920	749,274,020	1,082,020,160

Description.	Average from 1881 to 1890.	1892.	1893.	1894.
	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>	<i>Number.</i>
Sailing craft.....	4,275	4,166	4,323	3,875
Steamboats.....	2,986	5,277	3,827	4,186
Tow barges.....	3,426	5,417	6,179	6,465
Total.....	10,687	12,860	14,322	14,466
Loaded.....	8,398	10,534	11,187	11,895
Empty.....	2,289	2,326	3,135	2,571
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Burden of loaded craft.....	1,535,710	2,316,453	2,496,559	2,708,941
Burden of empty craft.....	343,506	362,716	582,954	438,613
Total.....	1,879,216	2,679,169	3,079,513	3,147,554
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Quantity of merchandise.....	2,675,119,260	4,112,561,960	3,819,885,740	5,162,495,820

Number of seagoing vessels owned in Hamburg on December 31.

Year.	No.	Tons.	Year.	No.	Tons.
1845.....	223	42,802	1886.....	488	341,393
1850.....	326	71,258	1887.....	496	360,569
1855.....	448	119,747	1888.....	501	384,310
1860.....	486	142,416	1889.....	537	464,581
1865.....	539	188,347	1890.....	587	538,220
1870.....	439	184,496	1891.....	598	569,238
1875.....	443	219,567	1892.....	605	591,180
1880.....	491	244,279	1893.....	631	618,488
1885.....	481	322,135	1894.....	644	663,703

W. HENRY ROBERTSON,
Consul.

HAMBURG, November 27, 1895.

FREE PORT OF BREMEN.

The free port of Bremen has been in existence from time immemorial. In the early centuries, it is said that a small fishing fleet anchored on the River Weser, at a point about 100 miles from the sea. The party having landed a hen with her brood of chicks, observing that the hen immediately called the chicks together and put them under her wing, accepted the sign as a good omen, and then and there made the first settlement of Bremen.

Bremen rapidly grew in importance under the Bishop Adalbert, and her power was extended to all lands of the north as far as Greenland. In the fourteenth century, seafaring vessels anchored at the walls of Bremen laden with grain, beef, butter, wine, English wool, tin, spices, fruits, oil, herring, lumber, hemp, iron, and furs, which were transported to the interior by teams, and by small shippers up the shallow rivers Weser and Aller for which purpose treaties were entered into with and between Hanover, Brunswick, and Oldenburg.

A systematic sounding of the River Weser from Bremen to its mouth and the placing of danger signals was made in the fifteenth century.

The use of the compass and other seafaring instruments made it no longer necessary for vessels to hug the coasts in sailing to foreign lands, and vessels to Bremen increased in numbers and also in size.

The gradual cutting away of the forests from the upper river banks increased the wash of sand into the river, so that as the ocean ships grew larger the Weser at Bremen grew shallower, and the city could no longer be reached by them. To provide against the loss, Bremen established a harbor at Vegesack, about 15 miles down the river. The larger vessels could not reach even Vegesack, after another half century. The harbor at Brake, in the territory of Oldenburg, about 35 miles from Bremen, was then the only harbor on the Weser. By the treaty of Munster (1648), a duty was levied on cargoes entering the port of Brake, and, in consequence, Bremen was apparently doomed as a seaport; but, with an energy which has characterized her existence even to this day, Bremen took upon herself, in 1806, the name of "Free Hanseatic City." She entered into commercial treaties with Great Britain, the United States, Brazil, and Prussia in 1820, and made the beginning of a new life.

Bremen was represented at the Vienna congress in 1823 by her famous citizen and burgomaster, Johann Smidt. The congress recognized the importance of streams bounding the lines of foreign states, and the Weser navigation act of 1823 resulted. A systematic and regulated ship's tariff was arranged by the several states interested, the net proceeds to be proportionally applied to keeping the stream navigable.

In view of having no harbor now for sea-going vessels, Bremen recognized her dependence on other states, and the consequent danger she was in of entirely losing her place as a port. Through her burgomaster, Johann Smidt, in 1827, Bremen secured a small tract of land from Hanover at the

mouth of the River Geeste, about 50 miles from Bremen, and built her harbor there.

The first dock in Bremerhaven was finished in 1830. The finishing of two more, each larger than the preceding, soon followed. Immense new docks, to cost \$4,000,000, with facilities for handling and dry docking the largest modern vessels, are now in course of construction.

The greatest number of large vessels, as well as the best, which came to Bremerhaven up to 1860, carried the American flag (only one American vessel has been here during the last three years, a small brigantine).

Sailing officers of that day, now living at Bremerhaven, tell how the fine American vessels, handled with wonderful skill, used to leave the basin by means of their sails alone.

In 1857, Bremen realized the importance of steam as applied to navigation, and a number of her citizens founded the North German Lloyd Steamship Company. This company, which is practically an institution of Bremen, began with three small steamers plying between Bremen and England, and has grown constantly since to its present colossal dimensions. Seamen to the number of 4,874 are on this company's pay rolls, and 1,000 workmen are employed in the shops and at the docks in Bremerhaven and Bremen; more than 4,400 have been in the company's employ for more than one year, and more than 970 from ten to thirty years. The company have a fund of more than \$500,000 for pensioning old seamen and the widows and orphans of seamen.

The Hansa and Neptun steamship companies are also important institutions of Bremen.

Thus Bremen's importance as a seaport remained secure, in so far as her harbor was concerned, but she was handicapped by being 50 miles away from the harbor, resulting in an extra expense of about \$250,000 a year in handling and transporting goods. Besides this, modern business means and methods brought the merchants and manufacturers in closer relation with merchants abroad. Where goods in the past had been bought up in large quantities by Bremen merchants and stored in Bremen warehouses, there now became a demand for more immediate shipment to and from the interior.

Bremen was still further handicapped in her commercial race with Hamburg and Rotterdam by her forced transport into the interior by rail. Hamburg could transport goods by the Elbe and its tributaries into the heart of Germany, and Rotterdam by the Rhine even as far as Strassburg.

A Government commission was appointed in 1874 with representatives from the States of Bremen, Prussia, and Oldenburg to investigate and report on the feasibility of correcting and deepening the River Weser from Bremen to the sea, and to submit plans for the same. The commission reported favorably in 1879, but Prussia and Oldenburg declined to share in the expense of the undertaking, which was estimated at \$7,500,000. Bremen had already expended about \$50,000 on the river besides her constructions at Bremerhaven, but with the understanding that the Government, or at

least the states to be benefited, would deepen the Weser as well as the Werra and the Fulda, in the interior, and thus form the Rhine-Weser-Elbe Canal, and make Magdeburg and Hanover seaport towns, and place the whole of the interior of Germany in water connection with Bremen. Bremen was willing to undertake the work.

Deepening the Weser, so as to admit vessels of 15 feet draft to Bremen, would make it possible for all vessels engaged in European trade to reach this harbor, and this fact had as much weight with Bremen as the prospect of the Rhine-Weser-Elbe Canal.

The following law was enacted April 5, 1886, by the imperial Government:

SECTION 1. The free Hanseatic city of Bremen is empowered to levy a tax on all vessels of more than 300 cubic meters carrying capacity, which navigate the River Weser from the sea to the Bremen harbor above Bremerhaven, in accordance with the imperial law (article 54, section 4) governing corrected navigable streams, provided the said city of Bremen corrects the River Weser from Bremen to Bremerhaven so as to admit vessels drawing 5 meters (16.4 feet) of water.

SEC. 2. The imperial chancellor shall designate the date for enforcing the tax.

Thus empowered, the Bremen Senate and Bürgerschaft, in June, 1887, levied a tax of 25 cents on each ton of goods that would come to or go from the new harbor by the river. This has not been enforced until 1895.

It was estimated that "500,000 tons of goods would be carried on the river during the first year after its improvement, and that there would be a yearly increase of 40,000 tons; that the receipts at 3½ per cent interest for twenty-eight years would equal the interest on the investment, and that in sixty-five years it would equal the capital and the interest thereon, and the interest on interest." It is difficult to imagine where the freight would come from if it were to increase in a progression of 40,000 tons a year for twenty-eight or sixty-five years. Finally, Prussia and Oldenburg, the states bordering on the river, ceded the right to Bremen for correcting the river, provided that Bremen would pay for whatever damage by salt water, diking, etc., they might suffer as a result of the work. Bremen, however, undertook the work and completed it in six years, 55,000,000 cubic meters (1,941,880,000 cubic feet) of earth and sand being removed, and 2,000 acres of land were reclaimed by filling in. Vast quantities of sand and earth were washed to the river's mouth by the current, where it now forms objectionable sand bars. The completed work cost, in round numbers, \$7,500,000.

Bremen was forced in 1884 to join the imperial customs union, which took effect October 1, 1888. That date also marked the beginning of the "free port" of Bremen as it is now constituted.

Inasmuch as it was no longer possible to hold the entire Bremen territory free from customs duty, it was concluded, for the purpose of facilitating shipping, to construct a new harbor and dock, with sheds and warehouses where the whole might be surrounded by an iron screen fence and kept duty free. Bremerhaven being a port of Bremen, it was treated in the same

way. A drawback to this scheme was that about \$7,000,000 were invested in warehouses outside of this limit. These houses are used, however, for goods, duty free, with the disadvantage of being under the control of Government officials and the consequent impossibility of the warehouse owners not being masters of their own time in handling the goods in the warehouse. They must open and close at the time prescribed by the officials.

The city owned a small tract of unoccupied land between the river and the railroad, and bordering on the town. It was low and sandy and chosen as a fit sight for the harbor. An adjoining tract was bought by the city, with a view of using it for harbor purposes in the future and thus keep it from the control of speculators. The dimensions of the new harbor are 8,145 feet long and 1,300 feet wide. The ground is sandy. The water basin is 6,500 feet long and 390 feet wide except at the opening, where it is only 280 feet wide. The water in the basin is 23 feet deep at low tide. The basin was constructed free of water, and it was designed to be deepened 3 feet more, if necessary, without disturbing the walls. The foundation of the wall encircling the basin is supported by 30,000 piles, 60 feet long driven perpendicularly every 3 feet, in five rows, 3 feet apart. These are anchored by three rows of piles 35 feet long started beside the three outer rows and driven at an angle with them. The whole are staid with a row of piles driven on the bank side and bolted to another row on the water side. Plank was used in making a bed for the brick and cement walls, which are 15 feet high and average 5 feet in thickness. A tunnel 4 by 6 feet is built in the wall through which are passed the various pipes conducting water, gas, and electricity for use on the docks and in the buildings.

There are at present ten one-story sheds, separated from the basin by a vast number of movable cranes of the Neukirch patent, and by a double row of railroad tracks. The sheds are built of brick and roofed with slate. They are each from 140 to 270 feet in length and 35 to 40 feet in width.

Other new sheds are now in course of construction. Large four-story warehouses are on the further side of the sheds from the basin and separated from the sheds by a street, on which is space for a driveway and two railroad tracks, and a row of twenty-eight cranes. All the cranes are operated by a central hydraulic force and transfer goods from ship to cars, or from ship to shed, or from shed to car or warehouse, or *vice versa*, in an incredible short space of time. One crane has a lifting capacity of 22,000 pounds, and one 1,800 pounds; all the others average 3,300 pounds. While the harbor basin is comparatively small, it proves to be large enough owing to the rapid dispatch of cargoes.

There is a second harbor about 2,000 feet in length and 150 feet in width; it is not of much importance, it being used as a storage place for dredging machines and small boats.

A third harbor, known as the wood and manufactory harbor, is about 4,000 feet in length and 390 feet in width. The water is 21 feet at low tide. The shores are diked, and there are piers on one side constructed of wood.

This harbor is used principally for the accommodation of vessels with cargoes of wood, cement, oil, etc. It is not within the free-district limit

A fourth smaller harbor, called the "safety harbor," is the original harbor. It is situated near the tracks of the Oldenburg Railway, some distance from the new harbor. It is used chiefly for the accommodation of rice shipments. It is also outside of the free district.

There is a floating dry dock in the new harbor 325 feet in length and 49 feet in width, made in sections, and has a lifting capacity of 2,650 tons. It requires two hours to raise a ship out of, or to lower into, the water.

The following table represents the number of vessels and their net capacities reckoned in cubic meters (1 cubic meter=35.316 cubic feet), which have arrived and departed at Bremen from 1889 to 1894, inclusive:

Year.	Vessels arrived in the Freihafen.		Vessels arrived in the safety harbor.		Total.	
	Number.	Capacity.	Number.	Capacity.	Number.	Capacity.
		<i>Cubic meters.</i>		<i>Cubic meters.</i>		<i>Cubic meters.</i>
1889.....	2,742	1,283,969	1,295	.....	4,037	1,283,967
1890.....	2,616	1,244,217	1,012	219,961	3,628	1,464,178
1891.....	2,998	1,740,000	1,063	292,374	4,061	2,032,374
1892.....	3,035	2,007,825	581	286,508	3,616	2,294,333
1893.....	3,262	2,572,990	474	252,819	3,736	2,825,809
1894.....	3,160	2,280,852	473	255,078	3,633	2,535,920

The following table represents the quantities, in tons, of goods landed and shipped:

Year.	Freihafen.	Safety harbor.	Total.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
1889.....	254,162	139,151	393,313
1890.....	341,420	129,027	470,447
1891.....	442,688	172,628	615,316
1892.....	542,427	157,935	706,362
1893.....	599,725	152,383	752,108
1894.....	651,722	139,647	791,369

The above table does not represent the total of goods arriving at Bremerhaven, much going by rail direct to and from the interior.

The State leased the entire harbor district, including those harbors outside of the free limit, to a private corporation.

I have been permitted to see and copy the articles of agreement between the State and the corporation. The following is a translation of the same:

ASSIGNMENT OF MANAGEMENT.

The following assignment of management is entered into between the State, represented by the board for docks and railroads, and the Bremen Storing Company:

SECTION 1. The management of the establishments for commerce and accommodations for storing and their appurtenances situated in the free port and safety harbor mentioned in

exhibit A and B, will be conducted by the Bremen Storing Company under the following conditions:

SEC. 2. The State places at the disposal of the Storing Company the establishments mentioned in section 1 (reserving, however, its rights of ownership thereto) for the period mentioned in this agreement (section 20), for which the company binds itself to conduct the management in the general interest of commerce. The assignment of the establishments to the company will be under date to be fixed by the board, but in every case before October 1, 1888. The company is permitted to perform all business commonly belonging to the business of a storing company. It is not allowed to make loans or advances on goods stored with them. The company can expedite goods only at the request of residents of Bremen.

SEC. 3. The use of the establishments and accommodations is compensated for by means of a tariff made by the board, by and with the advice of the company and the consent of the Senate and Burgerschaft. The board may permit or order a deviation from this fixed tariff of fees in exceptional cases, provided that it is in the interest of commerce to do so. The leasing of rooms and storing places are in accordance with the tariff fixed by the board. The consent of the board is required for a deviation from the same, as far as the board for the customs union has entered into contracts for rooms and storing places in the buildings and on the grounds assigned to the company. The company enters into the contracts with all the rights and obligations therein stipulated. The company must see that persons having authority to handle merchandise in the free district can do so unmolested, excepting in the case of merchandise delivered to the company for the purpose of handling and storing. The company is bound to issue storing certificates and warrants on demand of the board, in accordance with regulations sanctioned by the board.

SEC. 4. The privilege of using the establishments assigned to the company is open to all who pay the fees, stipulated for section 3, and observe the regulations made for the management. The State reserves the right to levy public taxes on goods, especially wharfage; also, to issue such regulations regarding traffic in the free district as best serves the general interest, and especially required in the interest of the customs.

SEC. 5. The company defrays the expenses of the management (section 7) from the receipts collected by the management (section 6). If there is a deficiency, the State has to add the balance.

SEC. 6. All moneys received by the company, excepting the interest on the capital invested, belong to the receipts of the management.

SEC. 7. All expenses incurred by the administration and management, with the exception of those caused by the dock and customs management, as well as the fines to which the company is subjected, belong to the expenses of the management (sections 11 and 13). Especially belonging to the expenses of the management are (a) the salary and wages of the officers and workmen needed for the management of the establishments mentioned in section 1, including those which are needed for the management of the railroad and switching service in the free district and safety harbor; (b) the office and office supplies, including rent; (c) the keeping in good repair all buildings, machinery, and arrangements assigned to the company, as well as all implements needed for the management, with the exception of those required for street and track constructions, for which the State must account; (d) the renewing of the machinery and arrangements, for which purpose, for the various branches of the management the board, taking into consideration the actual requirements, has to issue, annually, to the treasury a plan for renewal, while the State is responsible for the renewing of the buildings, streets, and railway tracks; (e) the repairing, replacing, and increasing of implements, excepting, however, those which are required in extending and making new establishments (sections 8 and 4); (f) the expenses of the management of the engine house; (g) the expenses of the management of the cranes, including the floating crane, windlasses, and lifts; (h) the expenses of the arrangements for shooting coal; (i) the expenses of the railroad and switching service; (k) the expenses of lighting the buildings, storing places, and crane ar-

rangements; (*l*) the water used, which is furnished by the city waterworks at the rate of 5 cents per cubic meter; (*m*) the part for the sick and accident insurances as well as similar outlays enforced by imperial law; (*n*) cost of fire insurance for the buildings, machinery, and implements; (*o*) the expenses incurred in the liability for joining tracks according to the rules of the Royal Prussian State Railroad management.

SEC. 8. The company receives 2 per cent of the net profits, when the dividend to be divided does not exceed \$3,570. The State next receives 4 per cent of the capital invested in the establishments under this agreement, but of the capital invested in the establishments the State is to receive only 2 per cent at the end of the present fiscal year (1893-94). Discrepancies which may have occurred according to section 5 are to be refunded to the State from the sum last above-named. The State receives 75 per cent of the balance of profit up to \$11,900, 80 per cent up to the next following \$11,900, and 85 per cent up to \$23,800, or more; the company receives the balance. The cost for the establishments which are assigned to the company by reason of extension or reestablished shall be added to the capital invested. The Senate and Bürgerschaft decide the question whether the extension or reestablishing of the establishments are needed, as well as whether the capital therein invested shall pay an interest of 4 per cent or less.

SEC. 9. The company at its discretion arranges the bookkeeping and business methods and management. The company is bound to arrange and keep records for general, and especially for all statistical, purposes in accordance with the direction of the board. Quarterly reports of the receipts and expenses must be rendered to the board. The board has the right at all times to inspect the books of the company and to inquire into the business and management. The company is responsible for the safe keeping of moneys on hand. All receipts not needed for expenditures must be delivered quarterly to the city treasury unless requested by the company in shorter periods. The annual settlement embraces the period from January 1 to December 31, and must be made and placed for adjustment before the board as soon as possible after the close of the calendar year, and the amount in favor of the State deposited in the general treasury. All payments to the general treasury are to be made at the discretion of the board.

SEC. 10. The company shall engage and discharge officers and workmen needed in conducting and managing the business, and render official instructions to the same, in so far as they are not limited by general rules made by the board. The officers of the company, in so far as it is deemed necessary by the board, must be sworn by the latter in the interest of the State and customs. The board must request the discharge of officers and workmen against whom complaints have been entered if, in the judgment of the board, the complaints are well founded. The company shall inform the customs management of all officers engaged by them in their service at the free port and safety harbor. The Bremen customs department shall also give the names of all custom-house officers on duty in the free port or safety harbor to the company. The officers needed for the management of the railroad and switching service are employed by the State. The salaries and pensions are to be refunded quarterly by the company to the treasury (section 7*a*).

SEC. 11. The company shall see that its officers and workmen do not violate the laws and regulations of customs or against the rules and regulations of the railroad and harbor management. Fines which are collected for such offences shall be paid by the company.

SEC. 12. As long as this agreement remains in force, the company is not allowed to arrange and manage other commercial establishments or storing facilities than those in the free district and safety harbor either for their own or for foreign account. In case of increased traffic, if it should be deemed serviceable and necessary to provide temporarily other storing facilities for goods it can be done only with the consent of the board, agreeably with the rules set forth in this agreement.

SEC. 13. At the expiration or cancellation of this agreement, the company shall deliver to the State the establishments and appurtenances in proper repair and working order. It shall also deliver all sums of money collected for the management. Should the establishments or

appurtenances not be in the condition mentioned, the company shall be responsible therefor. Should the agreement be canceled in accordance with section 19, the settlement of accounts shall be reckoned to the day the contract is canceled.

SEC. 14. As security for carrying out the obligations entered into by the company, the company deposits at the treasury the sum of \$119,000, for which the State pays 4 per cent interest annually. This sum is security for all claims by the State against the company, and when reduced by paying claims the deficiency must be made up to the former amount.

SEC. 15. The general lawful condition governing tax liabilities are applied to the company.

SEC. 16. The company will make their regulations conform with the conditions of this agreement especially to give the following wording to No. 7 of section 2 of the statutes: "(7) All other mercantile business connected with the trade of the certificates and warrants." The statutes relating to the purpose of the company, as well as section 18 of the regulations of the management, can only be changed by consent of the Senate and Bürgerschaft.

SEC. 17. Complaints made by the authorities to the company against officers or workmen acting in the free district, or at the free harbor, must be referred to the board for settlement.

SEC. 18. Everyone who deems himself injured through the company's management by their dispensations and actions has the right of complaint to the board. Both parties have the further right to appeal to the Senate. The company is bound to obey the instructions of the board issued in regard to all business transactions in the limits of the contract. The company has the right of appeal to the Senate for final decision against the directions and fines ordered by the board.

SEC. 19. If the company persistently refuses to comply with the stipulations of this contract and the direction of the board or Senate (sections 17 and 18), the Senate and Bürgerschaft have the right to cancel the contract with indemnity.

SEC. 20. This agreement expires on the 31st of March, 1904, and unless notice is given by either of the contracting parties one year before the above stated date. For nonextension of contract the contract shall stand extended from five to five years, with one year's notice for terminating it. The right of giving notice to abandon the contract rests with the State. The Senate must make use of this right in case the Bürgerschaft does not consent to an extension of the agreement.

BY-LAWS CONCERNING THE RESERVED FUND FOR RENEWING THE MACHINERY, ESTABLISHMENTS, AND FIXTURES.

By reason of section 7*d* of the assignment of establishments to the storing company, the following rules are issued:

SECTION 1. In order to provide for a reserved fund for the renewal of the machinery, establishments, and appurtenances in the free district, the storing company shall pay to the treasury a certain sum of money annually, which when accumulated shall equal the capital invested in the establishments for an estimated time paying 3½ per cent interest on interest. The storing company enters into these obligations on the day when the machinery or establishments are leased, or, if a formal delivery has not taken place, then on the day of putting the same in operation.

SEC. 2. There shall be paid annually on the basis of the total costs of the establishments and appurtenances now existing—(a) for the steam-boiler establishment, 8½ per cent estimated during ten years; (b) for the electric-light establishments and for the laboratories, 5 per cent, estimated during fifteen years; (c) for the movable cranes and in the wooden sheds and for the steam and tool engines in the repairing factory, 2 per cent, estimated during thirty years; (d) for the hydraulic-operating engines, accumulators, capstans, and car scales, 1½ per cent, estimated during forty years; (e) for the floating crane, three-fourths of 1 per cent, estimated during fifty years; (f) for the hydraulic lifting apparatus, one-half of 1 per cent, estimated during sixty years; (g) for the hydraulic pipe lines, one-ninth of 1 per cent, estimated during two years.

SEC. 3. The amounts mentioned in section 2 are calculated for the calendar year. The same shall be turned into the treasury as soon as possible by order of the board for docks and railroad.

SEC. 4. The reserved funds are to be booked by the treasury as special funds. It is the duty of the board for the harbors and railroad to invest the reserved fund in $3\frac{1}{2}$ per cent Bremen State bonds.

SEC. 5. The board of the harbor and railroad is permitted to take the necessary amounts from the reserved fund for the purpose of renewing the machinery establishments. A yearly report, covering the employment of the same, shall be made to the Senate and Bürgerschaft.

SEC. 6. Renewing the machinery establishments out of the reserved funds may be done as soon as the entire engine at proper use and with proper care is worn to the extent that it must be designated as in need of repairs. The board for docks and railroad decides in doubtful cases whether such repairs are needed, provided a complaint to the Senate has been allowed.

SEC. 7. The board for the harbor and railroad is empowered to add to and amend these rules at any time.

SEC. 8. The foregoing rules shall go into effect at once, and shall apply also to the moneys paid out of the reserved repairing fund for the period from October 1, 1888, to December 1, 1890.

GEORGE KEENAN,
Consul.

BREMEN, *September 23, 1895.*

FREE PORT OF COPENHAGEN.*

The Copenhagen Free Port Company issued the following circular at the opening of the free port in November, 1894:

It is well known that Copenhagen has for centuries played a prominent part in the trade of the Baltic. Its favorable position and excellent port made it the chief emporium of the Baltic, and toward the end of the last century it was the most important trading station in these waters. But in the very beginning of the present century, these circumstances were altogether changed, through events of war, and few cities have sustained harder treatment than Copenhagen. The union between Denmark and Norway was at the same time put asunder, and the commercial life of the country was paralyzed. Many large trading places have been crushed forever under similar, nay, even less cruel blows, but thanks to its favorable position, Copenhagen soon began to recover, and since the middle of this century it has gone steadily forward. During the last decades, Copenhagen has recommenced to get hold of the wholesale trade on the Baltic, for which it naturally has so many qualifications, and which will now be further facilitated by the construction of the free port, which we are now going to mention.

In the spring of 1891, it was decided to construct a free port at Copenhagen, and this new port has now been opened for traffic. It would be too circumstantial to give a detailed description of this considerable work, but we may be allowed to state some of the numerous advantages which this port offers to the trade, especially to the transit trade, of the Baltic. Tides being unknown at Copenhagen, the new port, of which the depth of water is 30 feet, will at any time afford access to the quays for the largest vessels. No bars obstruct the passage, and while the Baltic is difficult to navigate for the large transatlantic vessels, great depths of water are found everywhere on the road to Copenhagen. Moreover, Copenhagen

*See also CONSULAR REPORTS No. 132 (September, 1891), p. 1.

is as free of ice as any port of the Baltic, and has for the last ten years most rarely been inaccessible to steamers.

Copenhagen is in regular steamship connection with all Swedish, Finnish, Russian, and German ports of the Baltic, as well as with Norwegian, British, and the most important south and west European ports. The free port has direct communication not only with the Danish but also by means of steam ferry at Elsinore, with the Swedish railways, and another ferry is going to be established between the free port and Malmo in 1895. All charges in the free port are so moderate that it actually is one of the least expensive ports in Europe. The tonnage dues having been entirely done away with, and the port charges, which are reduced to one-half, being levied only when the goods pass from the territory of the free port over the Danish customs boundary, the expenses of ships are limited to pilotage and wharfage, which are charged according to a very moderate tariff.

Finally, in mentioning that the free port is furnished with excellently constructed warehouses and sheds, with the most perfect machinery for loading and discharging cargoes, and with a complete system of electric power (cranes, elevators, etc.), we may safely state that the Copenhagen free port will be a place particularly advantageous for the storage of all kinds of merchandise that is to be transhipped to the Baltic.

The statements contained in the above circular are in every respect true, and the causes that led to the construction of the free port are in no way detrimental to the old and well-known reputation of Copenhagen as a port of excellent facilities for shipping, but the movements in other quarters, which threatened this city in its importance as a shipping center of foreign trade, demanded a check, which it is confidently hoped they have received through the construction of the free port.

The supervising architect gave a lecture before the committee of the Free Haven Company on "The Establishment of the Copenhagen Free Port." He gave an interesting general view of the work, accompanied by technical explanations, which were further illustrated by superb drawings, copies of which I hereby subjoin in proper order.* He stated that "the necessary enlargement of the harbor of Copenhagen, in connection with the desire to make the traffic to this place easier and cheaper, not only to combat the constantly increasing competition from the outside (a competition which was especially supported by establishments such as the free ports in Hamburg and Bremen, the North Sea and Baltic Canal, etc.), but also to create a more extensive traffic, have been the leading motives for constructing the free port of Copenhagen." Continuing, he said that the situation of the free port is as favorable as that of any other harbor, inasmuch as it is in the closest proximity to deep water and to the Sound, the entry to the Baltic, where it has been impossible, with few exceptions, to produce or preserve the depth of water necessary for large transatlantic vessels. Particularly with regard to an increased transit trade, where the goods will be exempted from the payment of harbor charges and customs liabilities, the free port will certainly be of the greatest importance. Merchandise which passes into Denmark from the free port will, of course, have to pay the usual charges and duty, which correspond to the taxes in the harbor proper, but for all goods which pass through in transit or are stored in the free port, there will be

* Filed in the Bureau of Statistics, Department of State.

much less expense on account of the mechanical appliances for discharging and loading, and because goods entering the free port for storage or transshipment pay no duty. Goods stored in the free port can be hypothecated by the owner for his convenience by means of warehouse notes or certificates, which the company can issue under the law, a copy of which is subjoined.

The construction of the free port, the law for the creation of which was passed March 31, 1891, was made on a water area, part of which was previously a harbor. This harbor, called the Kalkbrenderihavn, is the present north basin of 24 feet depth in the free port. South of this basin runs an area of land, 550 feet wide and about 1,200 feet long, in an easterly direction; this area has on the north side the so-called middle basin, 24 feet deep, which is the smallest of the three basins of the free port. On the corner between this basin and the southern basin, are situated the ferry slips for the projected ferry between the free haven and Malmö, Sweden.

The western quay, about 1,950 feet long, forms one side of the large south basin, which is divided into two basins by a mole 1,000 feet long, issuing from the southern end. These two basins are called the east basin (30 feet deep), and the west basin (26 feet deep). On the eastern side, the division from the roadstead of the Sound is formed by a so-called east mole about 3,000 feet long.

The entrance into the free port is protected against high seas in rough weather by means of a breakwater, built with blocks of concrete (beton) in a depth of water which varies from 10 to 24 feet, and between the Lynetten and Trekroner fortresses there are two other breakwaters, constructed of concrete and stone around a pile support. These latter are for the protection of vessels which are moored to the east side of the east mole, which is a part of the Copenhagen harbor, and is therefore considered Danish territory, while the free haven is considered foreign territory. The free haven has a land area of about 66 tønder (89.76 acres) of land, of which 8 tønder (10.88 acres) belong to the steam ferry area, and a water area of about 44 tønder (59.84 acres), the south and middle basins comprising 37 tønder (50.32 acres), and the north basin about 7 tønder (9.42 acres); altogether about 110 tønder (149.6 acres). The total length of the quays and bulwarks is about 12,000 feet, viz, about 7,500 feet in the south basin, about 2,000 feet in the middle basin, and about 2,500 feet in the north basin. Besides this, the quay bordering on the roadsteads is 3,000 feet long and belongs to Danish territory. The ground is inclosed by a double customs fence (the outside 9 feet high and the inside 8 feet) on the southern, western, and northern sides, with two main entrances from the city. The necessary customs guard-houses have been erected here at these entrances, and at the southern side there is also a custom-house to handle goods which are brought into the country by rail or wagon.

The east mole is 270 feet wide for the first 1,000 feet from the south, and 250 feet wide for the remaining part. The limits of the free-port territory on the east are protected by an iron fence 9 feet high running along the

elevated "Langelinie" promenade. The storehouses beneath this elevated promenade have doors opening to the east on the roadstead and on the west opening on the free port. These particular storehouses can then be used either for domestic trade or for the purposes of the free port, as the case may require. The promenade has a height above the ground of 17 feet on the southern 1,000 feet of the mole, and on the remaining part 8 feet. The width of the promenade on the entire length of the mole is 30 feet. Toward the south the promenade is carried over, and, in fact, forms the roof of the above-mentioned shed about 800 feet long, which consists of two stories—that is, cellar and ground floor. East of the elevated promenade, on the eastern side of which a fence 4 feet high has been erected for the protection of foot passengers, is situated the domestic quay, whose width varies from 40 feet on the southern 1,000 feet of the mole to 20 feet on the northern part. The southern end of the east mole is divided into two parts by a canal, for lighters, about 32 feet wide, which connects the southern basin very conveniently with the roadsteads. This will be of especial importance for lightering between the old harbor and the free haven. This canal is crossed by four bridges. There is also a smaller customs guardhouse here, and during the night the canal will be shut by means of a chain or floating boom.

Paved and macadamized streets have been laid out in the yards of the free port. One street, 60 feet wide, inclosed between two high fences, connects the free port with the custom-house proper of Copenhagen. This latter road necessitated the building of three viaducts for the traffic of the city.

The earthwork in the middle and south basins was done by excavating after inclosing the water area with embankments and pumping the space dry. These embankments were about 4,500 feet long. At the entrance to the free haven the embankment, which had to be removed again, was constructed of a box filled with earth. Besides these, there was a cross embankment about 1,500 feet long, which divided the inclosed water area, the size of which was 81.25 tønder (109.68 acres), into two parts, a northern section of about 45 tønder (60.8 acres) and a southern section of about 36.25 tønder (48.9 acres). The pumps were four centrifugal pumps, one of 16 inches, one of 13 inches, and two of 12 inches. The first two were reckoned capable of lifting 500 cubic feet and 300 cubic feet per minute to a height of 40 feet, while the two last lifted 300 cubic feet per minute to a height of 25 feet. The southern excavation work comprised a space of about 512,000 cubic meters (18,081,792 cubic feet), and the northern about 585,000 cubic meters (20,659,660 cubic feet). A Lübeck excavating machine was used in the first section, excavating about 175 cubic fathoms per day of ten hours. In the second section was also placed one Lübeck and two Belgian machines, the two latter capable of lifting 130 and 80 cubic fathoms in ten hours.

The quay walls of the eastern side of the south basin were constructed of brickwork from the bottom of the basin to the surface of the ground; on

the southern and western side the walls were built on a pile foundation, which ends 8 inches below water. This latter construction is the same around the entire middle mole length of 4,700 feet. On the pile foundation was placed a wall of granite, provided with a running tunnel for various pipes, electrical wires, etc.

The breakwater toward the northeast, which protects the entrance to the free haven basins, is constructed below the water of blocks of concrete of special construction, particularly adapted to the conditions here, and probably for the first time applied in this shape. The depth of water is 10 to 11 feet in the western half division and 24 feet on the rest. Each block is 10 feet high and 10 feet wide, and extends 8 feet in the length of the breakwater. On the blocks are placed granite walls with a parapet of broken stones. The necessary packing on the outside of the breakwater, consisting of flints and limestones, completes the work. The entire breakwater is constructed of 265 large blocks of concrete. The peculiar construction of the work makes it possible to move the breakwater if desired.

The construction of the extension of the east mole is somewhat similar to the work of the breakwater, except that the blocks used for this mole are $11\frac{3}{4}$ feet wide. Light-houses are placed at various positions.

The various buildings which have been erected in the free haven are the administration and office building, guardhouse, provision stores, lavatory, custom-house, shed below the promenade on the east mole, shed of two stories, warehouse of five stories, central heat house for the three last-named buildings, silo warehouse, the corrugated plate shed, a smaller office building, locomotive house, and the electrical central station.

The shed under the elevated promenade on the east mole consists of a cellar 7 to 8 feet high and a room above of 11 to 12 feet high. The division between the cellar and top room is constructed in the main with steel beams, reaching across the entire width of the shed, between which there are copes covered with beton and flooring. The flooring here, as elsewhere in the warehouses of the free port, consists of a double layer of boards, with asbestos paper to prevent the spread of fire. On the western side of the east mole, at the south basin, two warehouses are in course of construction. They consist of two and five stories, respectively. The first, called shed No. 1, has a length of 300 feet and is 80 feet wide; the cellar is 8 feet high, the room above 14 feet, and the next room 17 feet. The floor of the middle room is calculated to be capable of bearing a weight of 450 pounds per square foot, and the room above 300 pounds per square foot. At a distance of about 146 feet from shed No. 1 lies the five-story warehouse No. 1. The cellar is 8 feet high, the next room above 14 feet, the first loft 11 feet, the second and third lofts 10 feet, and the fourth loft, or top room, 11 feet high.

On the middle mole, lies the high and airy shed covered with corrugated plate. This shed is about 192 feet long and 100 feet wide, and covers an area of about 19,200 square feet.

On the northern end of the same mole, lies the grain elevator and silo warehouse, which is 125 feet high, 160 feet long, and 100 feet wide. Finally, there is the electrical central station.

HARBOR TAXES IN COPENHAGEN.

The following is the proclamation concerning the change from harbor dues formerly levied in the port of Copenhagen on vessels entering from foreign countries to a merchandise tax on their cargo:

SECTION 1. Referring to section 8 in the law of March 31, 1891 (No. 44), regarding the establishment of a free port in Copenhagen, etc., the law concerning harbor dues in Copenhagen for outgoing vessels as provided for in the law of March 31, 1864, shall be canceled from the day the free port is opened for traffic. In lieu of the harbor dues for incoming vessels engaged in foreign trade, as provided for in the above-named law, which is cancelled from the same time, a tax * on the merchandise imported shall be levied, calculated at 30 öre (8.04 cents) per register ton, according to the subjoined schedule. The tax is also levied on all goods which, having been in the free port, afterwards pass therefrom into the customs district without regard to the manner in which they were brought into the free port; provided, however, that goods which have not been brought into Copenhagen by sea from a foreign country can be exempted from the payment of the tax, if the customs officer in the free port certifies to this fact.

SEC. 2. The tax is further levied on goods which arrive by sea at Copenhagen or from the free port by land through the inclosed connecting road from the free port to the Copenhagen custom-house. But goods which have been stored under the control of the custom-house and are reexported inside of thirty days, either direct by sea or via some domestic place, without being discharged at such place, are exempted from the tax.

SEC. 3. Mail packages, traveling carriages, and traveling articles, which travelers bring with them; clothing, tools, etc.; small quantities of merchandise, such as oilcloth, porcelain, etc., brought into the country by the crews of vessels lying in the free port or in the harbor; and provisions and inventory of vessels imported direct from the vessel in question, and further small parcels of merchandise, which the crews of men-of-war bring with them for their own use, are exempted from the tax.

SEC. 4. The Faroe Islands, Iceland, Greenland, and the Danish West Indian Islands are considered inland.

SEC. 5. If the goods amount to less than one-tenth of a registered ton, the tax is yet levied on one-tenth of a ton, but not less than 3 öre (8 mills) shall be levied on each article.

SEC. 6. Measures and weights are accepted in accordance with the bill of lading or by appraisement, unless it be deemed necessary by the customs officers to actually remeasure and reweigh the articles.

SEC. 7. The eventual tax to be paid is collected by the office where the declarations are recorded.

SEC. 8. Declarations as to nondutiable goods shall be recorded in the office situated in the district in which the vessel is discharging, without regard to the fact that the vessel may have been entered at some other place.

SEC. 9. For goods in bond the tax is paid where the goods are cleared.

SEC. 10. The tax on (a) goods stored in free warehouses; (b) goods which are forwarded by land or sea to domestic places; (c) goods which are forwarded by land to a foreign country, and (d) goods which, after having been stored, are reexported within thirty days to a foreign country by sea shall be paid where the declarations of storage or reexportation are made; where declarations are made at several places, the tax is paid at the last place.

* The tax mentioned in this proclamation concerns goods entering the customs district of Copenhagen and not the free port.

Schedule.—The following is the schedule regulating this tax as mentioned in section 1 of the proclamation:

Schedule of taxes.

[Öre=2.68 mills; tönne=3.94783 bushels for cereals and 4.6775 bushels for coal]

Description.	Tax levied on—	Amount of tax.
Refuse :		<i>Öre.</i>
Horn and horn tips.....	100 pounds.....	2.1
Rags.....	do.....	2.1
Paper.....	do.....	2.5
Bran, all kinds.....	{ 1 tönne.....	2.3
	100 pounds.....	2.1
Old rope.....	do.....	2.3
Druggists' articles, bark, leaves, seeds, flowers, berries, herbs, roots and wood, sorts.....	do.....	3
Licorice juice.....	do.....	1.8
Ashes (all kinds), soda, and alkali.....	do.....	1.2
Bast, cocoa fibers, fibers and piassava.....	do.....	3.75
Bones.....	do.....	1.7
Powder and bone dust.....	do.....	1.9
Bleaching powder and chloride of lime.....	do.....	1.9
Cotton.....	do.....	3.3
Books.....	do.....	3
Cacao beans.....	do.....	1.8
Chicory roots.....	do.....	1.8
Drinkables (all kinds) and vinegar, bottled, in boxes and baskets.....	do.....	3
Animals :		
Sheep, goats, and lambs.....	Each.....	7.5
Horses.....	do.....	60
Foals.....	do.....	30
Horned cattle and calves.....	do.....	30
Hogs.....	do.....	10
Pigs.....	do.....	5
Donkeys.....	do.....	30
Birds, loose or caged.....	1 cubic foot.....	.75
Fish :		
Alive.....	100 pounds.....	1.15
Fresh.....	do.....	1.5
Dried and salted.....	do.....	2.70
Anchovies.....	do.....	1.4
Game.....	do.....	3
Dyestuffs :		
Woods.....	do.....	2.3
Herbs.....	do.....	1.8
Cochineal and indigo.....	do.....	1.9
Madder.....	do.....	1.25
Lamp black.....	do.....	4.6
Orleans.....	do.....	1.4
Feathers and down.....	do.....	6
Grease, fat, and tallow.....	do.....	1.25
Braided work :		
Mats for packing.....	100 pieces.....	12
Basket makers' work.....	{ 1 cubic foot.....	.75
	100 pounds.....	7.50
Fruits :		
Almonds.....	do.....	1.9
Oranges.....	do.....	2
Orange peel, dry.....	do.....	5
Succades.....	do.....	1.25
Grapes.....	do.....	2.1
Apples and pears, in bulk.....	1 tönne.....	3

Schedule of taxes—Continued.

Description.	Tax levied on—	Amount of tax.
Seeds:		<i>Øre.</i>
Canary, clover, rape, turnip.....	100 pounds...	1.25
Flax.....	do.....	1.4
Other.....	do.....	1.5
Tannin:		
Bark.....	do.....	2
Gallnuts, acorn galls, and sumac.....	do.....	1.8
Glassware:		
Window, plate, pantiles, and patent glass for light-houses and vessels.....	do.....	1.2
Bottles.....	do.....	3
Other.....	do.....	3.75
Gums and resin:		
Aloe.....	do.....	1.3
Pitch, all kinds.....	do.....	1.6
Tar.....	1 tønde.....	4.3
	½ tønde.....	2.5
	100 pounds..	1.15
Hair, all kinds.....	do.....	1.7
Straw, hay, and dried sea weeds, and chaff.....	do.....	6
Hemp, flax, and tow, and hemp unhackled.....	do.....	2.7
Shellac.....	do.....	2.1
Flax.....	do.....	2.1
Tow, all sorts.....	do.....	3.75
Garden and field plants:		
Cabbage.....	Per 60 heads.	7.5
Potatoes and beets—		
In bulk.....	1 tønde.....	2.5
Packed.....	do.....	3
Onions, all sorts.....	100 pounds...	2
Hops.....	do.....	4.3
Potato flour.....	do.....	1.4
Ice in blocks.....	do.....	1.3
Earth and clay (all sorts), sand and gravel in bulk.....	1 tønde.....	5
Sand and gravel packed.....	100 pounds...	1.25
Pottery.....	do.....	4.3
Stoneware, crockery, porcelain, and biscuit.....	do.....	3
Earthen pipes and retorts.....	do.....	2
Sugar pots and sugar molds of clay.....	do.....	6
Coffee.....	do.....	1.25
Cork and cork shavings.....	do.....	6
Stoppers.....	do.....	10
Grain and vegetables in the pod:		
Unground—		
Buckwheat and barley:		
In bulk.....	1 tønde.....	2
In bags.....	do.....	2.4
Beans and lentils:		
In bulk.....	do.....	3
In bags.....	100 pounds...	1.2
Pease and vetches:		
In bulk.....	1 tønde.....	2.73
In bags.....	do.....	2.73
Oats and malt:		
In bulk.....	do.....	1.82
In bags.....	do.....	2.4
Wheat and maize:		
In bulk.....	do.....	2.5
In bags.....	do.....	2.61
Rye:		
In bulk.....	do.....	2.31
In bags.....	do.....	2.4

Schedule of taxes—Continued.

Description.	Tax levied on—	Amount of tax.
Grain and vegetables in the pod—Continued.		
Ground—		<i>Öre.</i>
Buckwheat.....	100 pounds...	1.4
Oats.....	do.....	1.3
Manufactured—		
Hard bread.....	do.....	2.7
Vermicelli and macaroni.....	do.....	3
Starch.....	do.....	1.8
Gunpowder.....	do.....	1.4
Spices :		
Pimento, caraway seed, ginger, and bayberries.....	do.....	2
Anise, cardamon, mace, and cloves.....	do.....	2.7
Cinnamon.....	do.....	3.75
Bay leaves.....	do.....	6.7
Nutmegs.....	do.....	1.6
Pepper.....	do.....	2.3
Mustard seed.....	do.....	1.2
Charcoal.....	{ 1 cubic foot..	.75
Coal.....	{ 100 pounds...	2.5
Glue.....	1 tönne.....	2.9
Candles, all kinds.....	100 pounds...	3
Dry goods :	do.....	1.4
Cotton and linen thread.....	do.....	2.5
Linen, canvas, duck.....	do.....	1.6
Bags.....	do.....	2
Woolen—		
Thread.....	do.....	3.75
Goods.....	do.....	3
Milk and cream.....	Per pot.....	2.5
Oil in bottles, packed in baskets with straw.....	100 pounds...	3
Paper :		
Carbon, pierced for roofing.....	do.....	1.4
Other.....	do.....	1.5
Pulp and wood pulp.....	do.....	2
Rice starch.....	do.....	1.8
Reeds (bamboo, canes, and other reeds).....	do.....	5
Sago and tapioca.....	do.....	1.4
Soap, green.....	do.....	1.3
Hides, dried calfskins, untanned lambskins, dried sheepskins, and skins for the use of furriers.....	do.....	2.5
Butter.....	{ 1 tönne.....	3
	{ ½ tönne.....	1.7
	{ ¼ tönne.....	1.25
	{ ⅛ tönne.....	1
	{ ⅙ tönne.....	6
In other kind of packing.....	100 pounds...	1.50
Stones :		
Unhewn (hard, paving, mill, grinding, and flag).....	{ 1 cubic foot..	1.76
	{ 100 pounds...	1.15
Plaster.....	{ 1 cubic foot..	1
	{ 100 pounds...	1.15
Lime.....	{ 1 cubic foot..	.86
	{ 100 pounds...	1.15
Chalk.....	{ 1 cubic foot..	.97
	{ 100 pounds...	1.15
Sand.....	{ 1 cubic foot..	1.3
	{ 100 pounds...	1.15
Cement.....	{ 1 tönne.....	4
	{ 100 pounds...	1.15
Slates, ciphering.....	do.....	2.2

Schedule of taxes—Continued.

Description.	Tax levied on—	Amount of tax.
		<i>(Dre.</i>
Sponges, washing.....	100 pounds....	6. 7
Acids (liquid) in bottles.....	do.....	1. 6
Tea.....	do.....	2
Tobacco and tobacco substitutes :		
Leaves and stalks.....	do.....	2. 3
Smoking.....	do.....	1. 8
Cigars.....	do.....	3. 3
Cordage.....	do.....	1. 9
Trees, bushes, plants (live).....	{ 1 cubic foot....	. 75
Lumber :*	100 pounds....	3
Firewood of 2 feet (other lengths proportionately).....	1 cord.....	30
Float.....	100 pounds....	7. 1
Willow, all kinds.....	do.....	8. 6
Oak.....	1 cubic foot....	. 75
Other wood sorts.....	do.....	. 67
Staves and bottom pieces—		
Of oak.....	100 pounds....	1. 6
Of pine.....	do.....	2
Heath brooms and brooms of twigs.....	do.....	4. 4
Matches.....	do.....	2. 5
Hoops.....	{ do.....	6
Oars, handspikes, wedges, wooden spikes, shingles, veneers (all kinds) coop-	1 cubic foot....	. 75
ers' work and woodwork.....	100 pounds....	2
Furniture, used articles and ready-made barrels and boxes.....	1 cubic foot....	. 75
Turf.....	{ 1 load.....	30
Wool, common and shoddy.....	1 cubic foot....	. 75
Skinners'.....	100 pounds....	4. 3
Carriages and carriage work.....	do.....	3
Wax.....	1 cubic foot....	. 75
Eggs.....	100 pounds....	1. 25
Oysters.....	do.....	3. 3
Other goods, not named above.....	1 tonne.....	3. 76
Transit goods, contents unknown.....	100 pounds....	1. 15
Goods subject to various taxes when packed in the same kind of receptacle.....	do.....	1. 5
	do.....	1. 5

* Pieces of boards and planks of less than 2 feet pay tax as lumber and not as firewood.

FREE-PORT CHARGES.

As already stated, goods entering the free port do not pay the merchandise tax detailed in the foregoing schedule, but while stored in the free port awaiting sale or transshipment they are charged for storage and labor according to the schedule following.

Storage charges per 100 pounds for thirty days.

[1 Öre=2.68 mills.]

Articles.	Charges.	Articles.	Charges.
	<i>Öre.</i>		<i>Öre.</i>
Grain :		Fruit.....	8
In bulk, stored at a height correspond-		Seeds.....	4
ing to 1 tönne (3.947 bushels) per		Fancy goods.....	9
square foot—		Glassware.....	15
In the silos.....	3	Grits.....	3
In the lofts.....	5	Gum.....	5
In bags, in the lofts (per tönne).....	6	Gutta-percha.....	5
Refuse cotton.....	4	Yeast.....	3
Albumen.....	9	Nonsmelling manure.....	3
Alum.....	5	Hemp.....	4
Anchovies.....	3	Gloves.....	10
Anchors.....	2	Resin.....	3
Druggists' goods.....	4	Hats.....	15
Asphalt.....	3	Horsehair.....	9
Whalebones.....	8	Honey.....	6
Bast.....	8	Horn.....	9
Pitch.....	3	Hides :	
Bones.....	4	Raw.....	5
Biscuit.....	8	Prepared.....	9
Tow.....	4	Hops.....	5
Shoe blacking.....	8	Isinglass.....	8
Tin :		Indigo.....	11
Plate.....	3	Instruments.....	9
Ware.....	6	Earth.....	3
Plums, dried.....	5	Jute.....	5
Ink.....	6	Iron.....	2
Cotton :		Pipes.....	3
In bales.....	4	Wire.....	4
Yarn.....	6	Wares.....	3
Brandy.....	4	Coffee.....	3
Cement.....	3	Cocoa.....	3
Champagne.....	4	Potash.....	5
Chocolate.....	5	Skinner's wool.....	6
Cigars and cigarettes.....	15	Camphor.....	6
Chicory roots.....	6	Carbolin.....	4
Cycles.....	15	Potato flour.....	5
Dates.....	5	Potatoes.....	3
Dextrin.....	3	Bran.....	4
Divi-divi.....	7	Split cod.....	7
Down.....	11	In boxes.....	4
Vinegar.....	4	Chloride of lime.....	5
Oak bark.....	6	Rags.....	9
Elephant tusks.....	9	Cognac.....	4
Ore.....	2	Cocoa fiber.....	9
Hogsheads, empty.....	15	Currants.....	5
Stuffs for coloring.....	5	Cork.....	14
Dyewood.....	3	Knickknacks.....	6
Color extract.....	6	Shoddy wool.....	9
Lard.....	3	Chalk.....	6
Varnish.....	9	Spices.....	6
Fibers.....	6	Curled horsehair.....	9
Figs.....	5	Basket work.....	9
Fish :		Meat.....	3
Fresh.....	4	Conducting wire.....	3
Dried.....	7	Clay.....	6
Bottles.....	6	Earthenware.....	6
Pork.....	3	Glue.....	8
Feed cakes.....	3	Hide clippings.....	6
Foot wear.....	8	Linoleum.....	8
Phosphorus.....	5		

Storage charges per 100 pounds for thirty days—Continued.

Articles.	Charges.	Articles.	Charges.
	<i>Öre.</i>		<i>Öre.</i>
Candles.....	4	Canes.....	5
Leather.....	9	Plate glass.....	6
Mats.....	6	Playing cards.....	7
Malt.....	4	Liquors.....	4
Almonds.....	5	Ivory nuts.....	4
Dry goods.....	10	Tacks.....	2
Margarin.....	5	Starch.....	3
Marble.....	2	Cast-iron goods.....	5
Machines and parts.....	14	Succade.....	6
Flour.....	3	Sugar.....	3
Metal.....	2	Sponges.....	15
Pipes.....	3	Bristles.....	6
Minerals.....	2	Sulphur.....	3
Mineral waters.....	4	Sewing machines.....	14
Furniture.....	9	Soap.....	4
Millstones.....	3	Bags.....	8
Nuts.....	8	Roofing paper.....	7
Oil.....	3	Tallow.....	3
Cheese.....	7	Tapestries.....	8
Palm pith.....	4	Intestines.....	7
Paper in bales.....	4	Tea.....	8
Paraffin.....	4	Tar.....	3
Perfumes.....	6	Tobacco.....	5
Pianofortes.....	9	Ropes.....	8
Piassava.....	9	Fish oil.....	3
Pumice stone.....	4	Wood:	
Porcelain.....	7	Pulp.....	2
Punch.....	4	Flock.....	5
Rice.....	3	Wooden goods.....	9
Refuse.....	3	Matches.....	9
Rum.....	4	Carpets.....	10
Raisins.....	5	Staves.....	9
Sago.....	5	Peat dust.....	3
Salt peter.....	2	Wool.....	9
Salt.....	2	Woolen yarn.....	9
Sardines.....	4	Weapons.....	7
Sailcloth.....	6	Vegetable hair.....	5
Bed feathers.....	11	Wine.....	4
Mustard.....	4	Grapes.....	5
Herring.....	4	Window panes.....	6
Silk.....	14	Wax.....	4
Sirup.....	5	Dried apples.....	5
Slate.....	3	Eggs.....	5
Rails.....	2	Pease.....	3
Writing paper.....	6	Beer.....	4
Butter.....	5	Oysters.....	4
Soda.....	5		

LABOR CHARGES.

I do not think it practicable or advisable to set out in detail the various rates charged for the handling of goods stored in or passing through the free port. Suffice it to say that, like storage rates, they are regulated by schedule and made as low as possible.

FREE-PORT CHARTER.

Copenhagen free port warrants act, approved March 30, 1894.

(1) As long as the free-port charter, granted on the 27th of April, 1892, to the Copenhagen Free Port Joint-Stock Company remains in force, the company may issue warehouse notes (warrants) and certificates for any goods warehoused under its care in the said free port, and any warehouse notes or certificates so issued shall have the force and effect declared by this act.

(2) Any person who shall deposit or have deposited any goods with the company may demand a warehouse note for the goods deposited, and may also, either at the same time or subsequently, demand a certificate. Any person who subsequently to the issuing of a warehouse note for any goods, shall apply for a certificate respecting the same goods, must produce to the company such warehouse note, showing that he has a good title according to the provisions of article 3. Whenever a certificate is issued, the fact of its being issued shall be stated in writing on the warehouse note. Any such warehouse note or certificate may be made out for delivery to a specified person or to bearer generally. Every warehouse note and every certificate shall be dated and signed on behalf of the company, and shall state the depositor's name and occupation, his place of residence or place of business, the name, quantity, and marks of the goods deposited, the value of the goods as indicated at the time of depositing, and whether the goods are or will be insured by the company at the expense of the holders of the documents, as well as the date of depositing. The said statements shall be in the same words in the warehouse note and the certificate.

(3) With the exceptions mentioned in articles 8, 9, 10, and 15, the company shall only deliver the goods deposited upon surrender of the warehouse note, or in case a certificate has been issued and has been made use of either in pledging the goods in accordance with the provisions of articles 6 and 7, or in making a conditional sale in accordance with the provisions of article 10—upon surrender of both of the documents, duly indorsed with a receipt for the goods by the person who, either by being named in the documents or by virtue of an uninterrupted and complete chain of indorsements, or of a transfer in blank, appears to be the rightful holder; and the company, if it delivers up the goods deposited otherwise than in accordance with this provision, shall be held responsible to any person who may thereby suffer damage. Any such holder as aforesaid is entitled to claim delivery of the goods upon payment of all lawful charges for warehousing, conveyance, preservation, and insurance; provided always, that the company is entitled, though not bound, to verify the indorsements (see second paragraph of article 5).

(4) The company shall be liable for any damage or diminution occurring to the goods deposited from reception until delivery, unless it can be reasonably inferred that the damage or diminution has been caused by any war or insurrection, or by any fire or other accident, the prevention of which has been beyond the control of the company, or that such damage or diminution is the consequence of insufficient packing, natural decay, shrinkage, ordinary leakage, or the nature of the goods; provided always that the company shall be absolutely liable for any damage to the goods caused by any fault or neglect on the part of its servants within the performance of their duty, or by any defect in its buildings, machinery, or implements; provided also that the company shall be liable for any damage which has been caused by any outward defect of packing perceivable at the time when the goods were deposited, unless the company has made a memorandum of the defect on the warehouse note and on the certificate. The company shall be responsible to any holder in good faith for the accuracy of any statements in the warehouse note or in the certificate respecting the goods, unless it be stated in writing on the documents that the company has been unable to ascertain the accuracy of such statements. At the request of the depositor, the company shall be bound to weigh, measure, or count the goods deposited. The liability of the company in respect of any damage, diminution, or inaccuracy in the statements of the documents respecting the goods which might have been discovered by ordinary examination shall cease, if the person taking delivery does not,

before carrying away the goods, have such damage, diminution, or inaccuracy ascertained by the servants of the company or by legal survey.

(5) Any warehouse note or certificate may be transferred by indorsement either to a specified person or in blank, provided always, that any warehouse note may be made nontransferable by a clause to that effect, written on the document by the company at the request of the depositor. Any person who holds a warehouse note or a certificate in conformity with the provisions of article 3 defeats the title of anyone who may have lost such document, unless it be proved that the holder, when taking it, was not in good faith, or has been guilty of gross negligence. Under the same conditions, the holder defeats the title of anyone who would have been entitled to claim the goods as against the depositor. It shall, however, be incumbent upon the company to take proper care not to receive goods from any person whose title to the goods is suspicious. In case this be neglected by the company's servants, the company is responsible to any person who may thereby suffer damage.

(6) A transfer (indorsement) of the warehouse note passes the property in the goods. A transfer (indorsement) of the certificate only, made in accordance with the provisions of article 7 by a person holding in due course according to the provisions of article 3 operates as a pledge to the transferee of the goods deposited. The pledgee may transfer his right by further indorsement of the certificate.

(7) If it is intended to effect a pledge of the goods deposited, under the provisions in the second paragraph of article 6 by transferring (indorsing) to the pledgee the certificate only, the pledger must indorse on the certificate and sign a memorandum, stating the date and amount of the loan to be so secured, the interest stipulated, the day of payment, and the name, occupation, and place of residence or of the business of the pledger. The warehouse note must also be produced showing a good title according to article 3, and a memorandum (to be marked as a transcript) of the pledge so effected must be indorsed on the same, the principle being that any indorsement or memorandum which shall have been made or indorsed on either of the documents after their issue, must be transcribed verbatim on the other, and that such transcript must be marked as a transcript. When the said indorsements have been made, the documents must be produced at the office of the company, who shall be bound to ascertain that all indorsements or memoranda made or indorsed on either of the documents are in conformity with the provisions hereinbefore contained, and, if this be the case, make a statement thereof on the documents; in case of noncompliance, the company shall be liable as against any person who takes either of the documents in good faith. The same course shall be followed if the loan is subsequently increased, or if the terms of the contract are subsequently altered, or if the certificate, after the discharging of the debt, is made use of in pledging the goods anew. The right acquired by the pledgee under this article shall be preferred to the right of the holder of the warehouse note, in accordance with the provisions of this act.

(8) Upon payment of the amount of the debt, with interest to the day fixed for payment—and further accrued interest and expenses, in case payment be made after maturity (see article 9)—the holder (see article 3) of the warehouse note may at any time require the holder (see article 3) of the certificate to deliver up the same, and, if it has been specially indorsed to such holder, to indorse it with a receipt for the amount. If the holder of the warehouse note can prove to the satisfaction of the company that the holder of the certificate has no place of residence nor of business in Copenhagen, or, that it has not been possible to find him at his place of residence or of business, or that he can not or will not surrender the certificate, indorsed with a proper receipt, when necessary, the holder of the warehouse note, on depositing with the company the said amount with interest, and, if maturity has come, further accrued interest, besides expenses as estimated by the company, may claim delivery of the goods upon surrender of the warehouse note only. Where money has been thus deposited with the company, the holder of the certificate may at any time out of the sum deposited, upon surrender of the certificate, indorsed with a proper receipt, claim payment of the debt with interest and costs.

(9) If the amount specified on the certificate (see article 7) with interest, is neither paid nor deposited when due, the certificate must be presented to the person who, from the indorsements made on the certificate, appears to be the first pledger, and, in case of nonpayment, must be protested (*de non solutione*) by a notary public. If the amount specified on the certificate with interest thereon at the stipulated rate, and from the day when the debt has become due additional interest at the rate of 1 per cent per annum, and the expenses of the protest, is neither paid nor deposited within three week days from the day of the protest, the holder of the certificate, upon delivery of a copy of the protest, may require the company to sell the goods deposited, either by public auction or through a licensed broker. Where such goods are sold by auction, the revenue dues payable on such sale are regulated by the act of May 26, 1868 (an act fixing the duties to be paid on sales by auction of merchandise). Out of the purchase money—after deducting the expenses of the sale, charges for warehousing, and any expenses incurred by the company for conveyance, preservation, and insurance of the goods (see article 3)—the company shall first cover the claim of the pledgee. On receiving payment of the whole debt, with interest and expenses, the pledgee must indorse with a proper receipt and surrender the certificate. If the purchase money is not sufficient to cover the claim of the pledgee, the amount paid shall be credited on the certificate. If the purchase money exceeds the claim of the pledgee, the surplus shall be held in trust by the company, and shall be payable upon surrender of the warehouse note indorsed with a proper receipt.

(10) If the certificate has not been made use of in pledging the goods, a like memoranda may be indorsed on the warehouse note and the certificate, stating that the goods have been sold by means of the warehouse note, upon condition that a specified sum be paid on or before a specified day. After being thus indorsed, the documents must be produced to the company, who shall state in writing on them that they have been so produced, and the holder of the warehouse note shall, thereupon, upon paying to the holder of the certificate on or before the day named in the memorandum, the sum therein specified, be entitled to have the certificate delivered up to him indorsed with a proper receipt. If, however, the holder of the warehouse note can prove to the satisfaction of the company that the holder of the certificate has no place of residence or business in Copenhagen, or that it has not been possible to find him at his place of residence or business, or that he can not or will not deliver up the certificate, indorsed with a proper receipt, the holder of the warehouse note, on depositing the purchase money with the company not later than the first week day after the day named in the memorandum, is entitled to claim delivery of the goods upon surrender of the warehouse note only, indorsed with a proper receipt. The holder of the certificate, upon surrendering the same, indorsed with a proper receipt, shall at any time be entitled to have the money thus deposited paid out to him. If the purchase money be not so deposited on or before the first week day after the day named in the memorandum, the warehouse note shall become void as against the company, and the holder of the certificate shall be entitled to claim delivery of the goods, upon surrender of the certificate only, indorsed with a proper receipt.

(11) Where the certificate has been made use of in pledging the goods, and the debt thus incurred, with interest and expenses, has not been covered by the proceeds of the sale of the goods (see article 9), the holder of the certificate is entitled to sue any prior indorser who has not, by the express words of his indorsement, prevented such liability for the amount uncovered; provided, always, that the protest mentioned in article 9 be made not later than the second week day after the day fixed for payment; and provided also, that the sale be demanded within thirty days from the day of protest. Every indorser of the certificate is entitled to have delivered up to him the certificate and the protest upon payment of the said amount with interest and expenses. Any holder of the certificate and protest may sue, simultaneously or successively, and in any order, all prior parties liable.

(12) The time for bringing an action under article 11 shall be limited to six months. As against the holder of the certificate at whose request the goods have been sold, the said period shall be computed from the day of such sale; as against any other person liable (or his representatives), it shall be computed—if the person liable has paid without being sued—from the

day on which such payment was made, and in any other case from the day on which an action to recover the amount was commenced against him, or on which a claim for the amount has been lodged in his bankruptcy or in the administration of his estate after death. The bar of this enactment may be prevented in accordance with the rules enacted in the case of bills of exchange, as far as such rules shall be applicable.

(13) The rights of the holder of the warehouse note and the holder of the certificate to the goods deposited shall extend to any indemnity which may be claimed in respect to any loss of or damage to the goods, including the benefit of any contract of insurance effected by the company on behalf of the holders of the documents.

(14) Any warehouse note must be stamped in accordance with the rules for the stamping of single bonds with *ad valorem* duty in respect of the value of the goods as stated in the documents (article 2). A warehouse note may be indorsed without the use of a stamp. Certificates, as well as any indorsements or memoranda written on the same (see articles 7 and 10), shall be exempt from stamp duty.

(15) If any warehouse note or certificate is lost, it may be declared null and void by the court. Any person who wishes to apply for such a declaration must present an application to that effect to the president of the commercial court of Copenhagen. Such application must show to the satisfaction of the president what right over the goods the applicant held under the lost document, and the applicant must state and declare his willingness to make oath that to the best of his knowledge no other person has any other or prior right over the goods except as by him stated. If the president does not refuse the application, he shall allow the issuing of a public notice to the holder of the lost document, the time for such notice being twelve weeks (this period to be computed from the date of the last publication of the notice). The notice must be advertised three times in the *Berlinske Politiske og Avertissementstidende*, with intervals of at least eight days, and must also be served upon the company not later than the second week day after its being issued. Where such notice has been duly advertised delivery, in accordance with articles 8 and 10, or sale, in accordance with article 9, of the goods to which the warehouse note or the certificate refers, may be ordered on such security being given as the president shall determine. If delivery or sale is required sooner the president may, according to circumstances, allow the same by special decree.

(16) If the company's charges for warehousing, or any expenses incurred by the company for conveyance, preservation, or insurance of the goods be not paid within the time fixed by the regulations mentioned in article 18; or, if the amount due for the said charges or expenses exceed three-fourths of the value of the goods as estimated by experts to be named by the commercial court; or, if the goods or part of them in the opinion of such experts be in danger of destruction, the company shall be entitled to sell the goods, or part of the goods, a week after it has been made known through an advertisement inserted three times in the *Berlinzste Tidende*, and, as the case may be, through a notice affixed at the exchange of Copenhagen, as well as through registered letters sent by post to the holder of the warehouse note and the holder of the certificate, respectively, if their places of residence or business be known to the company, that sale will take place at the expiration of a week from the last advertisement. When all lawful charges have been covered, the surplus (if any) of the proceeds of the sale shall be held as trust money by the company, and shall be paid out to any person entitled to the same under the provisions of articles 8 and 9; what has not been claimed of such money within ten years after the date of the sale by some person entitled thereto, shall become the property of the company.

(17) By royal order, the provisions of this act may, with the necessary modifications, be rendered applicable to warehouse notes issued by the company for portions of goods deposited, designated by species and quality only.

(18) All actions to enforce any right or liability arising under this act shall be brought before the commercial court of Copenhagen. The Ministry of the Interior shall issue the necessary regulations relating to the use of warehouse notes and certificates.

THE FREE PORT AND AMERICAN TRADE.

Under the provisions of the foregoing act, goods stored in the free port can, in all cases where it is desired, be mortgaged by the consignee for the benefit of the American shipper. In response to inquiries from me on this point, three out of the four banks in Copenhagen—Den Danske Landmandsbank, the Private Bank, and Copenhagen's Handelsbank—have signified their readiness to make advances on such goods up to 75 per cent of their value, as expressed on the face of the warehouse note and certificate, and at the rate of interest governing commercial transactions at the time. The rate at present is 4 per cent.

The primary object in establishing a free port at Copenhagen is to counteract and offset the injury which would undoubtedly have resulted to her trade from the opening of the North Sea and Baltic Canal. Having now completed the work and established rates and charges, which transforms Copenhagen from one of the most expensive to one of the cheapest ports in the world, the authorities of the free port and the merchants at large are looking anxiously to the United States for that greater and more extended commerce, which it is hoped and confidently expected will make her the distributing center for Scandinavian and Baltic ports.

STEAM COMMUNICATION WITH THE UNITED STATES.

Coincident with the opening of the free port, a new Danish line of steamers (Urania Steamship Company, Alfred Christensen general manager), has been started, designed to trade between Copenhagen and the southern ports of the United States. The first ship of this line to go to the United States has already sailed for Charleston, S. C., and expects to bring back a cargo suited to the Baltic trade.

AMERICAN PRODUCTS.

Among other articles in demand and suitable for this trade, the following can be mentioned:

Phosphate rock.—Fertilizers are very generally used here, and the rock, which comes mostly from Florida, is shipped via Hamburg or Bremen. Direct cargoes would, of course, prove more profitable to both seller and purchaser.

Cotton.—While there are no spinning mills in Denmark, there are many of them in Sweden, and this port is only from one to two hours' distant in time from Helsingborg and Malmö, where it connects with the Swedish railways, besides having regular connection with all Baltic ports. I am told, also, that there is a fair demand for the various products of the cotton seed, such as cotton-seed meal and cake. The various kinds of cotton cloths have also a future here, especially cotton canvas and sailcloth.

Lumber.—White oak, pine, poplar, and walnut. I have recently reported on this subject.*

*"American Lumber in Denmark," CONSULAR REPORTS, No. 174 (March, 1895), p. 392.

Naval stores.—The quantity of shipping always passing in and out of the port, creates a constant demand for naval stores, both for local consumption and for transshipment.

Wheat and corn.—Both have been imported here for the last three or four years. Corn is used only to feed stock, as the people have not yet learned to eat it.

Oleo.—There is a great demand here for oleo, which is used in the manufacture of oleomargarine and other like cheap substitutes for butter, which are produced in great quantities in Denmark. The manufacture and sale of these articles is regulated by law.

In connection with the opening of the free port, there has been established the Copenhagen Free Port Trading Agency (Charles Christensen manager), designed to cooperate with American shippers and to receive and sell goods on consignment. I believe this agency has been advertising by circular in the United States. Merchants who contemplate shipping goods to the free port or into Copenhagen generally, or who wish to be informed more fully as to the conditions here, should correspond with the manager. I believe the time is propitious for American merchants to establish permanent business connections here.

ACKNOWLEDGMENT.

I acknowledge my indebtedness to Mr. G. Olsen-Haugé for valuable assistance rendered in the preparation of this report, and to the officers of the Free Port Company for courtesies extended.

ROBERT J. KIRK,

Consul.

COPENHAGEN, *March 16, 1895.*

SUPPLEMENTARY REPORT.

EFFECT OF THE FREE PORT ON TRADE.

As is well known, the past winter has been one of the most severe in the history of Europe. On this side of the Atlantic, trade was almost paralyzed during the month of February, and even as far south as northern Africa snow fell in quantities sufficient to impede railroad traffic. That the United States also suffered from the blighting cold, is shown by the destruction of the orange crop on the Florida peninsula.

Here in Denmark, climatic conditions were especially unfavorable to trade, and during the six weeks from January 25 to March 10, the port of Copenhagen was closed fast by ice and its usual business completely stopped. It must follow therefore that figures of commerce for a period embracing the said six weeks will be proportionately smaller than they would have been had favorable conditions prevailed.

A direct comparison of figures before and after the opening of the free port is at the present time impossible, for the reason that statistics will not be compiled till the end of the calendar year. But as an evidence showing an increase of trade and a general brightening up of business since the opening in November, it is a fact worthy of note that all warehouses in the old harbor of Copenhagen have been constantly full of grain and breadstuffs before as well as since the opening. Consequently, the importations into the old port not falling off in the meanwhile, whatever has been entered at the free port must be regarded as an increase of trade.

From November 9, 1894, to June 30, 1895, the books of the free port show the following receipts from the Black Sea, South America, and the United States:

	Tons.
Wheat.....	5,818
Barley.....	26,511
Rye.....	12,252
Maize.....	9,402
Bran.....	1,318
Oil cake.....	12,086
Cotton.....	548
Coffee.....	1,083
Saltpeter.....	997

According to merchants and business men, these figures show, with reasonable certainty, the practical results of the first six months of the life of the free port.

As already stated, a more creditable showing would undoubtedly have been made but for the stringent winter through which we have just passed and the consequent business depression.

Of the entries at the free port above quoted, the following quantities were reshipped to Sweden, Finland, and Germany:

	Tons.
Wheat.....	5,065
Barley.....	2,995
Rye.....	8,375
Maize.....	1,703
Cotton.....	548

The quantity of coffee reshipped was not obtainable.

Three cargoes, hitherto unknown in Copenhagen, have been landed in the free port, viz, one cargo of teak wood from Siam and two cargoes of cedar and mahogany from Cuba. These also have been partly reshipped.

In my principal report on the free port, I mentioned the fact that a new line of steamships (Urania Steamship Company) had been established to trade between Copenhagen and the United States. A movement is now on foot, backed by three of the four principal banks here, to organize a second line, likewise intended to be employed in hauling the inexhaustible products of our great country to the shores of northern Europe.

This is all that can be said at present of the practical results of the free port. Whether or not this great effort to increase the commercial importance of the ancient Danish capital will bear fruit, and whether Copenhagen will realize its dream of the future and become the chief mart of Scandinavian commerce, time, experience, and the vicissitudes of trade alone can show.

ROBERT J. KIRK,
Consul.

COPENHAGEN, *July 15, 1895.*

EXPORTS DECLARED FOR THE UNITED STATES.

QUARTER ENDED SEPTEMBER 30, 1895.*

CANARY ISLANDS.

Teneriffe.

Cochineal.....	\$11,549.51
Various	253.49
Onion seed.....	371.07
Total.....	12,174.07

CHILE.

Talcahuano.

Wool.....	17,883.10
Pichi.....	52.17
Total.....	17,935.27

FRANCE.

Bastia.

Candied citron.....	13,252.20
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Cette.

Candied fruit.....	16,264.94
Chemicals :	
Verdigris.....	1,777.47
Argols and tartar.....	42,553.30
Other chemicals.....	1,691.29
Essential oils.....	419.05
Nuts (almonds).....	190.48
Seeds.....	2,244.85
Mineral water.....	1,077.90
Vermuth.....	91.43
All other (mushrooms).....	1,299.56
Total.....	67,610.27

Marseilles.

Asphalt.....	1,273.80
Candied fruit.....	29,490.31
Cement.....	4,359.55
Cork and corks.....	332.93
Chemicals :	
Glycerin.....	17,280.09
All other.....	1,853.71

Drugs :

Argols and tartar.....	\$92,249.26
All other.....	9,755.01
Glue.....	20,380.58
Hair (animal).....	7,977.12
Macaroni, vermicelli, etc.....	11,952.24
Marble and stone.....	4,863.68

Nuts :

Almonds.....	49,588.68
Walnuts.....	21,219.19
All other.....	2,666.93
Ocher.....	10,483.89

Oils :

Olive.....	54,032.02
Sesame.....	2,369.31
All other.....	24,689.50
Paper.....	7,279.24

Provisions and vegetables :

Beans.....	1,330.54
Capers and olives.....	153.05
Truffles.....	210.52
All other.....	3,199.25
Rags and old rope.....	47,965.08

Seeds and flowers (not medicinal) :

Bulbs.....	66,551.87
Immortelles.....	956.17
Teasels.....	303.07
All other seeds.....	11,565.67

Skins and hides :

Raw skins and hides.....	105,956.68
Tanned skins and leather.....	893.53

Soap.....	17,702.37
Terra alba.....	254.74
Water, mineral.....	261.28

Wines and liqueurs :

Wine.....	3,205.94
Vermuth.....	19,338.69
Liqueurs.....	1,879.21

Wood :

Walnut, olive, and other cabinet, etc.....	1,530.21
Sticks and handles.....	317.49
Wool.....	265,960.57

* Received too late for insertion in their proper places in CONSULAR REPORTS No. 184 (January, 1896).

Wood for pipes.....	\$14,928.55
Sundries.....	4,333.55
Total.....	942,900.88
<i>Toulon.</i>	
Bulbs.....	882.45
Immortelles.....	342.73
Total.....	1,225.18

MANITOBA.**Lethbridge.*

Calfskins.....	7.00
Emigrants' effects.....	1,035.00

Coal:	
Bituminous.....	\$14,068.88
Anthracite.....	247.65
Hides of neat cattle.....	804.00
Iron screens.....	225.57
Sheep pelts.....	33.20
Wool.....	4,930.00
Total.....	21,351.30

SOUTH AUSTRALIA.*Adelaide.*

Furs and skins.....	64,495.89
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AMERICAN AND BRITISH TRADE WITH THE HAWAIIAN ISLANDS.

A report from Consul-General Mills, of Honolulu, dated December 26, 1894, which was printed in CONSULAR REPORTS No. 174 (March, 1895), pp. 406, 407, under the heading "British Trade with the Hawaiian Islands," gives figures showing a diversion of Hawaiian imports from American to British sources by reason of the growth of the carrying trade of the Vancouver and Canadian-Australian Steamship Company. Consul-General Mills inferred from the fact that increased shipments of goods were being made in Canadian steamers with resulting encroachment "on the business heretofore enjoyed by the long-established lines of American steamers," that "an English source of supply" was being opened up for the Hawaiian market which has heretofore been exclusively American, so far as this particular line of goods is concerned, most of the items being "those which form staple articles of export from California." In a note to the Secretary of State dated November 5, 1895, the Hawaiian minister, Mr. W. N. Castle, expressed conclusions and submitted figures opposed to those of Mr. Mills, and they are given here without prejudice to the statements of the consul-general as the deductions from the point of view of the Hawaiian Government. Mr. Castle says the tables appended to his note, which were furnished by the Hawaiian custom-house, show that the greater bulk of the merchandise named in the report of Mr. Mills is from an American and not an English source of supply. "The greater part, if not all the articles named," he adds, "are the product of that portion of the State of Washington bordering upon Puget Sound, whose nearest and most natural outlet to the Hawaiian market is by transit across the Straits of Juan de Fuca to the port of Victoria, B. C., and thence by steamer to Honolulu. By this route, the exporter saves freighting some 800 or 900 miles to San Francisco to send them by the American line of vessels mentioned in Mr. Mills's report, and secures far more rapid transit than in sending such produce by lumber ves-

* The declared exports under the head of "Winnipeg and Lethbridge" (Manitoba) in CONSULAR REPORTS No. 184 (January, 1896), p. 7, were declared at Winnipeg alone. This statement, transmitted by Consul Duffie, shows the exports declared at Lethbridge during the quarter.

sels sailing to Hawaii from the various ports of Washington and Oregon. It is noteworthy in this connection that traders along Puget Sound, in Washington, finding their trade with Hawaii increasing, have been seriously agitating the establishment of a line of steamers to Honolulu to carry their goods under the United States flag; but at present, that project seems to have been dropped because of inability to compete with the very heavy subsidies paid to the British steamers plying between British Columbia and Australia."

Following are the tables furnished by Mr. Castle:

Quantities of merchandise imported into Honolulu by the Vancouver and Canadian Australian Steamship Company for nine months ending September 30, 1894.

Articles.	From United States.		From Canada and Great Britain.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Lime.....barrels...	700	\$472.50	3,063	\$2,394.10	3,763	\$2,866.60
Flour.....bags...	12,380	8,479.50			12,380	8,479.50
Shooks.....bundles...			8,483	2,156.01	8,483	2,156.01
Fish.....barrels and packages...			338		338	
Do.....pounds...			24,590	3,227.17	24,590	3,227.17
Lumber.....feet...			70,151	722.16	70,151	722.16
Grain and feed.....bags...	22,739	14,241.94			22,739	14,341.94
Hay.....bales...			24	36.00	24	36.00
Total.....		23,193.94		8,535.44		31,729.38

Quantities of merchandise imported into Honolulu by the Vancouver and Canadian Australian Steamship Company for nine months ending June 30, 1895.

Articles.	From United States.		From Canada and Great Britain.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Lime.....barrels...	4,250	\$2,275.00	584	\$478.88	4,834	\$2,753.88
Flour.....bags...	39,650	25,200.43			39,650	25,200.43
Shooks.....bundles...	2,073	996.20	1,678	336.48	3,751	1,332.68
Fish.....packages...	16		266		282	
Do.....pounds...	118,050	1,151.42	1,190	1,353.07	119,240	2,504.49
Grain and feed.....bales...	141				141	
Do.....bags...	3,125				3,125	
Do.....pounds...	2,887,747	20,034.28			2,887,747	20,034.28
Total.....		49,657.33		2,168.43		51,825.76

SLAG CEMENT IN GERMANY.*

FRANKFORT.

In response to the instructions of the Department, the following information concerning the manufacture, cost, and uses of slag cement in Germany is respectfully submitted.

Slag cement is made by mixing pulverized hydrate of lime with basic blast-furnace scoria, which has been granulated, dried, and reduced to

* Reports in answer to instructions from the Department of State.

powder by grinding. It is used for certain purposes as a substitute for portland cement, for the reason, primarily, that it is about 20 per cent cheaper per ton, and being of lower specific gravity, "spreads farther," weight for weight, than portland cement, so that, taking both points into account, the economy of slag cement may be as high as 30 or 40 per cent. It is furthermore claimed that when properly made, mortar based on slag cement is more tenacious and elastic than that made from other materials, which gives it an advantage for the foundations of bridges and other constructions which are subject to unequal strain and the shock of passing trains and vehicles.

Slag cement seems to have been originally suggested by the excellent results obtained long ago in Italy with mixtures of hydraulic lime and "puzzolani," or the pulverized lava of volcanoes, and was first produced industrially in Germany at the Georgemarie blast furnace in Westphalia about the year 1863, and the process there employed was described in an essay read by Mr. W. Lürmann before the Technical Society at Osnabrück in January, 1867. Blast-furnace owners recognized in the new manufacture a profitable outlet for the worthless slag that they had been for years piling up on costly land purchased for that purpose, and during the next decade many of them embarked in the manufacture of slag cement, only to find that their scoria contained elements that unfitted it for that purpose, and that the resulting cement was untrustworthy and worthless. The preparation of the slag for mixture with the lime was found to require careful and exact manipulation. It is granulated by quenching with water while in the white-hot fluid condition in which it comes from the furnace, and much depends upon the varying conditions under which this part of the operation is performed.

Several different methods of granulating and preparing the slag were invented and patented, among others that of Mr. Ludwig Roth, a furnace and mining engineer at Wetzlar, whose process was perfected about the year 1882. But it was soon found that the most important consideration, upon which all else really depends, is the character of the slag itself, resulting from the chemical composition of the ore mixture used and the pressure and other conditions under which the smelting has been effected. The essential element in basic slag for making cement is its silicic acid, and, this being in sufficient proportion, the next questions are (1) whether this element is "live" and in condition to unite readily and firmly with the lime, and (2) whether the slag contains a due proportion of magnesia and not an excess of some impurity—such as sulphide of calcium or other form of sulphur—which will resist this combination and sooner or later cause work laid in the cement to crumble and disintegrate.

Through these unknown difficulties, which in many cases no ingenuity could circumvent, the German slag-cement makers, many of whom were primarily manufacturers of portland cement, stumbled and labored for years, until repeated failures brought the whole subject into disrepute, and the portland-cement makers were obliged, in order to defend themselves from

the suspicion of adulterating their product with the cheaper slag cement, to sign an agreement to make no more of it. It thus happens that whereas there were in this country a few years ago a dozen or more firms that openly made and sold slag cement, there is to-day in western Germany, so far as can be ascertained, but one small district—in the valley of the Saar—where slag of perfect quality for this special purpose is produced, and where the slag-cement manufacture is concentrated in the hands of two firms of large resources and the highest responsibility. These are, respectively, Messrs. Böcking & Dietsch, at Malstatt-on-the-Saar, and the Cementfabrik, formerly Erhardt Brothers & Lingenbrinck, at Neunkirchen, a few miles distant from Malstatt.

The first of these establishments has maintained during the past nine years a fully equipped proving station, where its product is constantly tested and proved by methods that are recognized by experts as conclusive. Its cement has been approved and used by the engineers of Frankfort, Cologne, and other German cities, and it is offered for export by Mr. Franz Kirmmaier, of Speyer-on-Rhine, in shipments of 50 tons or more, at 5.35 marks (\$1.28) per barrel of 150 kilograms (330 pounds) free on board at Rotterdam. For smaller orders, down to 25 tons, the present price is \$1.40 per barrel. In shipping by rail or water, the lower specific gravity of slag cement as compared with portland cement causes a noteworthy difference in the space occupied. In Germany, where 10 metric tons (22,040 pounds) constitute a carload, this weight of slag cement occupies 10 cubic meters of space, while the same weight of portland cement fills only 7 cubic meters.

The Cementfabrik at Neunkirchen is likewise an industrial concern of high rank, which has labored long and faithfully to bring its product up to the highest standard of excellence. It exhibited its cement and building blocks, etc., made therefrom at Chicago in 1893, and gained one of the highest premiums given in that class of materials. Its cement has been officially tested at various times and with uniformly excellent results by the royal proving station at Berlin and the State testing bureau of Switzerland, which is under the direction of Professor Tetmaier, one of the foremost of European experts in that branch of science. It has been used in the harbor works at Offenbach-on-Main, and by many engineers in this part of Germany for substructures of various kinds, and so far as can be learned with satisfactory success. For most uses the mixture employed is one part of cement to three or four of sand. The firm at Neunkirchen does not at present export its product to any important extent, for the reason, apparently, that its output finds a ready market at home. But its capacity has been recently so enlarged that it can produce, on demand, a surplus for export, which is packed in double sacks of 50 kilograms each.

Exact information on some of the points involved by this subject are difficult to obtain, but from what can be learned the following would seem to be a fair statement of the uses and general repute of slag cement in Germany. While no competent engineer in this country would use slag cement

without knowing where, by whom, and from what materials it had been manufactured, experience shows that it may be employed with advantage, when of good quality, for various purposes, especially the foundations of buildings and hydraulic constructions, where the work will be always moist and protected from the sun. It is not adapted to boiler settings nor as an air mortar for brickwork. It is usually mixed in proportion of one to three or four, with sharp, coarse sand, and when of good quality requires about twenty-four hours to set. It is therefore often used for the foundations of sewers, but it sets too slowly for the upper work of such constructions. For this latter purpose, portland cement, which hardens in from two to four hours, is generally preferred.

Slag cement is also extensively used for the manufacture of paving tiles for sidewalks, railway stations, courtyards, etc., and for this purpose is mixed with fine Rhine gravel and quartz sand and squeezed under 500 tons pressure into square, lozenge-marked plates of such size that eleven of them cover a square meter (10.8 square feet) of surface, the cost of the tiles being 81 cents per square meter.

The manufacture of slag cement, while requiring thorough technical knowledge of good workmanship, involves no serious mechanical difficulties. The essential requisite is basic furnace slag of the right chemical composition, containing from 30 to 40 per cent of silicic acid, and, as already indicated, no chemical impurity that will resist or afterwards undermine the combination that is formed between the acid and the hydrate of lime upon which the whole strength and fabric of the cement depends. Only careful analysis and prolonged tests can safely demonstrate that the scoria of any particular blast furnace is perfectly adapted for this purpose. This having been established, and the plant erected, the first lesson to be learned is the exact method by which that particular slag can be best granulated. In this operation, the temperature of the slag when quenched, the pressure under which it has been smelted and drawn from the furnace, the quantity and temperature of the water used, must all be taken into account to insure a perfect result. Slag from gray foundry pig, smelted under high pressure and as free as possible from sulphur, is generally, other conditions being favorable, the best. Roth gives in his treatise, published in 1883, the following analysis of a slag from coke-smelted foundry pig, which yielded good results in the manufacture of cement: Lime, 51.62 per cent; silicic acid, 35.12 per cent; argillaceous earth, 8.53 per cent; magnesia, 1.58 per cent; peroxide of iron, 0.87 per cent; peroxide of manganese, 0.37 per cent; sulphur, 0.88 per cent.

When granulated it is dried and ground to fine powder in what is known in Germany as "Gruson mill," but it is thought that Griffin's American mill is quite as well, if not even better adapted to the purpose.

For the information of those who are technically interested in the subject, there is appended as an exhibit with this report a work of the highest authority and recent date, by Prof. L. Tetmaier, of the Polytechnicum at Zurich and

chief of the Swiss Government station for testing building materials.* Professor Tetmaier was one of the original and strongest advocates of slag cement; he has spent many years in exhaustive experiments with all kinds of building materials, and he gives in his present treatise the results of his comparative tests of hydraulic lime, portland, roman, and slag cements under all conditions of humidity, pressure, and temperature.

FRANK H. MASON,

FRANKFORT, *July 3, 1895.*

Consul-General.

DUSSELDORF.

Prior to 1860, there were but two cement factories in Germany, one at Bonn and one at Stettin. In 1861, the great Mannheim Cement Works were founded, the output of which, in 1891, was 450,000 tons. In 1870, the product of German cement factories had gained the confidence of the people. Shortly after the establishment of the present German Empire, the number of cement factories increased until there are now more than twenty in active operation. Five of these establishments manufacture a slag cement, for which they have adopted the name of puzzolan cement, in order to distinguish it from its kindred article of commerce known as portland cement.

Puzzolan cement is made by W. Herrmann, in Thale am Harz; Ch. Meyersberg, in Dusseldorf (factory in Dornap bei Elberfeld); Georgs Marien Bergwerks und Hüttenverein bei Osnabrück; Puzzolan Cement Fabrik Braunschweig; and Cementfabrik "Victoria" in Berlin.

The price of cement has varied from 7 to 9 marks (\$1.66,6 to \$2.14) per 180 kilograms (396.8 pounds), 170 net (374.8 pounds). Puzzolan cement, or slag cement, is sold at the lower figure.

I have diligently endeavored to ascertain the facts connected with the manufacture of slag cement, the kind of machinery used, how and where to get it, the names and addresses of manufacturers of such machinery, and other details such as would enable me, if I chose so to do, to establish a manufactory of slag cement. My efforts in this direction have been regarded with suspicion by those who are best qualified to furnish the desired information.

The methods of using slag or puzzolan cement are various. During the year 1884 many thousands of bags of puzzolan cement were brought from the Thale factory to this place.

The cement was used with sand in some instances, and with lime and sand in other instances, with uniformly satisfactory results. Mortar prepared by mixing 1 bag of cement, 2 bags of lime, and 1,000 pounds of sand, though costing no more than ordinary mortar, made a mixture of such superior quality that it may be recommended for the building of any wall structure, and particularly where dampness is to be feared or expected. This indorsement was signed by Royal Railroad Commissioner Theune, in 1884.

* Professor Tetmaier's publication filed in the Bureau of Statistics, Department of State.

I have in my possession copies of several strong indorsements of slag cement for building purposes, which show that, besides doing the work of other cement equally well, it also possesses the merit of being much cheaper

P. LIEBER,
Consul.

DUSSELDORF, *July 25, 1895.*

MAGDEBURG.

I have communicated with the following factories, which, to my knowledge, are the only ones manufacturing this article in Germany, and give an abstract of their statements:

Georgs-Marien Bergwerks und Hütten-Verein at Osnabrück.—We are manufacturing slag cement and have a capacity of 5,000,000 kilograms per annum. The price of our product is 2.20 marks (52.36 cents) per 100 kilograms (220.46 pounds) free factory; packing charges for export are 1.60 marks (38.68 cents) per barrel of 170 kilograms (374.8 pounds).

Cementfabrik Victoria Actien-Gesellschaft; Thale am Harz.—The production of slag cement has greatly decreased in the last year, owing to the depression in the building trade. We sold, in 1893, 10,000 barrels of 170 kilograms net, and in 1894, 9,000 barrels. Our factory has a capacity of 60,000 barrels per annum. We are selling the barrel of 170 kilograms net, exclusive of package, at an average of 3.30 marks (78.54 cents) free factory.

I learn from private sources that a meeting of the directors has been called for the end of this month to consider the advisability of closing the works.

Braunschweiger Cementwerke, Salder, near Braunschweig.—We have abandoned the manufacture of slag cement because we could not compete with portland cement in Germany. Our venture met with a decidedly unfavorable result. Only very extensive transatlantic orders could induce us to resume the manufacture of this cement. We sold our cement, inclusive of package for export, at 4.50 marks (\$1.07) free factory, and 5.20 marks (\$1.24) free on board Hamburg. During the last ten years we have executed large orders for St. Louis, where our cement was accepted by the State authorities.

Vorwohler Portland Cement Fabrik-Vorwohle (Duchy of Brunswick.)—We have never manufactured slag cement, but, in former years, added some slag to our cement. This we were obliged to abandon because the Association of Cement Manufacturers and the building authorities declared our product to be an adulteration, thus putting insurmountable obstacles in our way. We derived no pecuniary advantages from our process, but simply intended to improve the quality of our cement. To our knowledge all slag cement factories in Germany, with the exception of the Georgs-Marien Bergwerks und Hütten-Verein, have discontinued the manufacture of the same because the process was too expensive, and portland cement is preferred at the prevailing low prices.

F. A. Karsten & Söhne, Langenweddingen, near Magdeburg.—We abandoned the manufacture of slag cement some time ago, but can resume operations on receipt of sufficient orders. We can produce about 20,000 barrels per annum at a price of about 4.50 marks (\$1.07) per barrel, free on board railroad cars Langenweddingen.

Dr. Wilhelm Michaelis, Berlin-Friedenstrasse 15.*—Dr. Wilhelm Michaelis says this industry is well-nigh suppressed and dead in Germany, first because the Government was ill

* Dr. Michaelis is a cement technician, and is considered an authority on cement.

advised and did not give the article a proper trial, and secondly, because the powerfully developed and well-organized portland-cement industry immediately formed a ring against slag cement. In France, this industry is very differently situated and is well developed. There it has the aid of the Government, which stimulates the manufacture by awarding premiums for excellence. In Germany, the fight between the various interests killed slag cement, an industry which had a full right to exist, and of which I am a spokesman, principally from a scientific standpoint.

Inquiries made at various other sources confirm the fact that this industry is rapidly dying out in Germany, owing to the opposition of the portland-cement industry, the lack of support from the Government, the prevailing low prices of portland cement, and the general stagnation in the building trades.

JULIUS MUTH,
Consul.

MAGDEBURG, *June 25, 1895.*

SUPPLEMENTARY REPORT.

Slag cement is manufactured in the following manner: Slag sand is dried in kilns, ground in horizontal and roller mills, and, by means of mixing machines, mixed with burnt lime, which has, also, been ground in horizontal mills. The burnt lime is added in the proportion of 15 to 20 per cent, according to the purposes for which the cement is designed. Then the mixture is sifted by means of a sieve drum. The following machines are used in the process: Four horizontal mills with French millstones, one ball-rolling mill, various mixing machines, and one sieve drum. The horizontal mills are similar to the grain-grinding mills, and consist of the fixed bed-stones and the moveable upper stones, called runners. Both stones are perforated in the center, the perforation in the upper stone serving to allow the material to be ground to pass to the grinding surfaces, while the perforation in the lower stone is necessary to allow the shaft of the runner, *i. e.*, the mill spindle, to pass through and to leave space for the bearings of the same. The distance between the stones can be adjusted according to the results desired.

The ball-rolling mill consists of a strong cast-iron casing, with running surface, in which four heavy steel balls are put into quick rotation (about 180 revolutions per minute) by means of a vertical shaft with four claws. The material to be ground is between the balls. These rolling mills are said to have the advantage of greater capacity over the horizontal mills.

The mixing machine consists of a wrought iron casing in which two rolls, with screw-shaped shovels, lying in parallel bearings, and turning in opposite directions, mix the material.

The sieve drum, or sifting cylinder, sorts the material, according to the volume, by rotation, and the shifting cylinder resting somewhat inclined, is spanned with the finest brass wire gauze.

The Gruson patent ball mill can also be used instead of the grinding mills.

The Eisenhüttenwerk Thale, in Thale-in-Harz, furnishes horizontal mills and mixing machines; rolling mills are furnished by the Eisenwerk Nagel & Kämp Actien Gesellschaft, of Hamburg, and the sieve drums by the Maschinenfabrik Polysius, of Dessau. The Fried Krupp Grusonwerk, of Magdeburg, furnishes the complete outfit, and the Eisenhüttenwerk Thale, of Thale-in-Harz, will also make a contract for a full plant, having equipped several factories in southern Germany.

The process of manufacturing slag cement is not patented here, and no patents are used in the industry.

Slag cement should never be used alone, but always mixed, in a dry state, with sharp sand or gravel. Water should be added very sparingly, so that the mortar is as stiff as possible. After it has been used, it should be well moistened for 4 or 5 days, when this is possible. Slag cement is suitable as an air mortar for brick and other stone buildings, especially for mixing with lime mortar; it can, also, be used for partition walls in buildings, but can not be recommended for steam-boiler plants. For constructions under water and for foundations in damp places, the cement is said to be well suited, if sufficient time to harden can be allowed.

The following are the proportions in which it should be used for the different purposes: Water, vault, stair, and plaster masonry, one of cement to four of sharp sand; ordinary masonry, one of cement to five to eight of sharp sand. Mixtures with lime mortar are made in the following proportions: One leveled hod of cement and two heaped hods of lime mortar, corresponding in the proportions of one to three. Cement and water must be thoroughly tempered before being added to the lime mortar.

In using cement in caissons, the ready beton should be prepared dry, then moistened and exposed to the open air for an hour, then allowed to begin to dry and then thrown into the funnels. The proper mixture is one part cement, five to seven parts sand, and six to nine parts chamotte.

Slag cement has been used principally for foundations in the construction of the German Reichstag building in Berlin and the Reichsgericht (supreme court) in Leipsic. In water masonry, it was used in the construction of the Hamburg free port, and as mixture of lime mortar in all buildings erected by Gebr. Dippe, of Quedlinburg, the largest seed growers in Germany.

Since my report of June 25, I have learned the following in reference to the adaptability of slag cement compared with portland cement. While the latter has always given uniform results, *i. e.*, in one shipment of portland cement, every barrel or bag has shown the identical qualities as to color and time of hardening; this can not be claimed of slag cement. It has been frequently found that in one shipment of slag cement the several barrels or bags of cement required sometimes more and sometimes less time to harden, and were not uniform in color. This latter fact has particularly

developed in cases of buildings which were torn down, where it was found that the slag cement often showed spots of a bluish color running into green through the entire thickness of the layer, thus showing that certain ingredients must still be contained in the slag which, by a chemical process, change at times the color of the cement. To overcome this, some factories have colored their cement, using frankfort black. Nothing unfavorable is so far known against its lasting power, but this cement has hardly been in use long enough to establish this beyond doubt. Architects do not, as a rule, favor it, and prefer the portland cement, especially at the prevailing prices.

JULIUS MUTH,

Consul.

MAGDEBURG, *September 3, 1895.*

STETTIN.

Some years ago, a factory at Stettin manufactured slag cement, but, I am informed, it met with bad results. The Government also raised objections at that time to the manufacture of this article, as it was interfering with the portland-cement factories.

My inquiries as to the location of a factory existing at present were in vain.

F. W. KICKBUSCH,

Consul.

STETTIN, *July 5, 1895.*

GERMANY'S COMMERCE IN CASE OF WAR.

An article under the above caption, from the pen of Admiral Rheinhold Werner, is to be published next month in the German Revue. After pointing out the almost perfect system of Germany's harbor defences and her security from blockading or invasion on the seaside, the author takes up the Fatherland's commerce and its wide, ever-extending interests. He says the German marine has another great responsibility, the protection of commerce, and it is not yet able to do this well. Our foreign commerce employs thousands of German ships, and is all the time increasing. Its growth in Eastern Asia alone proves this; in 1888, we bought from China goods worth 999,000 marks (\$237,762), and in 1893, 14,065,000 marks (\$3,347,470). We sent, in 1888, 16,699,000 marks (\$3,974,362) worth, and in 1893, 33,268,000 marks (\$7,917,784). Here is a fivefold increase in imports and a doubling of exports. The case is similar with Japan. With Japan, the imports went up from 214,000 marks (\$50,932) in 1888 to 7,247,000 marks (\$1,724,786) in 1893—a thirty-five-fold increase; the exports from 4,570,000 marks (\$1,087,660) to 18,578,000 marks (\$4,421,564)—a fourfold increase. Take Australia during the periods put down above; we imported

from thence goods worth 9,188,000 marks (\$2,186,744) in 1888, and 96,240,000 marks (\$22,905,120) in 1893, and we sent thither 8,000,000 marks (\$1,904,000) in 1888, and 17,963,000 marks (\$4,275,144) in 1893. Hence, in that part of the world alone, we have a commerce amounting annually to 180,000,000 marks (\$42,840,000), and with the world 7,000,000,000 marks (\$1,666,000,000). This huge business, built up by hard work, enormous efforts united to untiring energy, by the labor, patience, skill, wisdom, and perseverance of German merchants, is, in case of war with a maritime power, almost entirely unprotected; this because our marine, lacking the necessary ships (cruisers) is unable to afford the requisite protection. The condition that confronts us is a very serious one, and it calls for earnest consideration. Protection can be exercised only by modern-built armor-protected cruisers, ships of great speed, strong, well equipped for fighting, of large coaling capacity, permitting them to cruise for months without the need of running home for provisions or fuel. How many such important ships have we? Only four protected cruisers—the *Kaiserin Augusta*, the *Princess Wilhelm*, the *Irene*, and the *Gefion*. They have arched steel decks over their so-called living parts (engines, steering gear, etc.), to keep away shots that may succeed in getting through the sides; but the other parts—even the guns—are unprotected. The four Chinese cruisers destroyed by Brisanz shots in the Yalu prove that the art of building hitherto held must be abandoned or very much bettered. An armor 10 to 20 centimeters thick is needed for the fast cruisers, and 60 to 80 centimeters for fighting ships.

France has to-day twenty-nine protected and twelve armored cruisers; 1896 will see one added to the twelve and two to the twenty-nine, and since the Minister of Marine has asked for, and doubtless will have granted to him, 80,000,000 francs for new ships to be built in the next ten years, the above number will be considerably increased. Beyond the Vosges, it has been believed, since the Kaiser Wilhelm Canal was opened, that to blockade or invade us on the seaside is practically impossible; but another belief has gained ground—the belief that we may be very materially injured in a very sensitive way by the destruction of our foreign commerce, and that this may be easily done as long as we leave it unprotected. What we have to expect from France in case of war we can readily calculate if we are to pay attention to what one of her active admirals (Aube), in one of France's leading reviews advises. He preaches, as did Melae in the Palatinate, to destroy everything that the fleet can reach with fire and sword, thus to give our national wealth such a blow as will touch us in our tenderest and most vital parts. The year 1870 proved how quickly war may be declared. In the event of war with a maritime power, our enemy may send out cruisers into all parts of the world to capture and burn our vessels and thus destroy our commerce. Only such ships as find themselves in neutral waters will be safe—safe, however, only so long as the neutral waters protect them. Even Bremen's and Hamburg's fastest ships, once seen by these fast cruisers, can not escape, for they make no more than 19 knots an hour, while to-day's fast

cruisers cover 21 and 22 knots. What will be the result? Frightful direct loss of national wealth—such a loss, too, as it will be impossible to ever recover or even make good; second, the crippling of our commerce and the cutting off of our food supplies, especially of wheat, of which we have to import annually, in times of peace, 30,000,000 centners.* Suppose Russia's borders are closed to us or bristling with hostile forces, Austria and Roumania requiring their own product for home consumption, what then? We must buy from America, but hostile cruisers can cut us off from all commerce with that country. In case of a long war, in which we battle perhaps for our national life, in spite of possible or probable glorious land victories, we may be beaten into submission by hunger. We must make up this difference in the number and quality of cruisers as soon as possible, if we do not desire defeat. It is true we may pay our enemies in their own coin by sending out our fast ships to make captures, but, as above stated, they run great risks as soon as seen by an enemy's modern fast cruisers. They may be able to keep away from the old ones, but certainly not from the new ones. We must make our cruisers equal, if not superior, to those of any possible enemy; we must do this in order to fight well in case of war, and to impose respect in time of peace, or when it is necessary to send, as now, into the East, where we have great present and rapidly growing interests at stake. Of what use are four cruisers when we must have always at least two in our own harbors?

After a long delay, the Reichstag voted the sums necessary for an armored cruiser and two cruisers of the second class. But to build them will take three years at least, and then they will not be enough. Six, and of these two armored ships, is the smallest number needed, and it is time to begin building them right away. Suppose something should happen to the machinery of the armored ship ordered, and nothing is more liable, what then? And this too, may happen at a time when we may need her most. It must be admitted that the Marine Ministry is repairing three second-class cruisers in such a way as to make them better than France's older protected cruisers in speed, power to attack, and to defend. The official figures give the three ships just referred to a length of 105 meters by 1,000 tons water displacement and 4.4 meters draft; they can carry 900 tons of coal and will have 10,000 horsepower engines. The engines are to be entirely separated from each other and will have three screws to turn, such screws as have proved so very successful in the *Kaiserin Augusta*, especially in the matter of speed. They are to be armed with two long 21-centimeter guns in armored revolving turrets, one long 15-centimeter rapid-firing cannon in an armored casemate, ten 8.8-centimeter quick-firing cannons behind protecting shields, ten 3.7-centimeter maxim guns, and four 8-centimeter machine guns. At the bow and on each side, under the water line, will be a launch pipe for the discharge of torpedoes; further they are all to have two armored battlemasts (*Gefechtsmasten*). The strength of the inner arched armored deck is to con-

* 1 centner = 110.24 pounds; 30,000,000 centners of wheat = 3,300,000 bushels.

sist of 10-centimeter Krupp nickled cast-steel. The gun and command turrets will be armored in a similar way. To avoid fire from grenades, steel and iron alone will be used in the building. The parts or sides otherwise unprotected will have a cork dam 75 centimeters thick and 2.5 centimeters high. The object of this is first, to decrease the shock when firing, and, second, to close automatically any holes made by shots.

While, as above stated, these not only will more than hold their own with old French cruisers but may meet successfully the old armored cruisers, their number is by no means large enough to enable them to cope continuously and successfully with the former, or to strengthen when and where necessary our cruisers in foreign ports, or even to do clearing and sentinel duty for our fleets. In view of such facts, even the most modest layman must admit, for he must see, the necessity for furnishing our torpedo fleet with ten new ships and our cruising array with at least six new cruisers, if we are to put our marine on a basis of anything like an equality with others, or to put it into a position to do its duty in defending and fighting for the Fatherland. The demand for money, *i. e.*, the sum necessary to do this, bears only a very small ratio to the many milliards involved. Field Marshal von Moltke said we would be kept fifty years under heavy armaments in order to hold the gains of 1870-71. For twenty-five years, these armaments have kept peace. Our army is as near perfection as is possible; our navy is not. It must be made so as soon as possible. We must protect our commerce—the life nerve of the nation; we must shelter it from wounds that would require centuries to heal. We have it in our power to do this, if we do it in time. It is universally acknowledged that our seamen are second to none on earth. They will fight as bravely, heroically, and unselfishly as our soldiers; but to what purpose if they have not the ships to make victory possible in the beginning and certain when won. If France can contribute 800,000,000 francs in the next ten years for new ships alone, shall Germany, with a population 12,000,000 larger, refuse 100,000,000 in the next three or four years? That too when it is not so much a question of attacking as of defending.

J. C. MONAGHAN,

CHEMNITZ, *October 28, 1895.*

Consul.

TELEPHONE SERVICE BETWEEN BELGIUM AND GERMANY.

AGREEMENT CONCERNING THE ESTABLISHING OF A TELEPHONE CORRESPONDENCE SERVICE BETWEEN BELGIUM AND GERMANY.*

The Government of His Majesty the King of the Belgians, and the Imperial Government of Germany, desiring to establish a telephonic correspondence service between Belgium and Germany, and enjoying the power which

* Translated from the *Moniteur Belge*, of October 10, 1895, by Consul Roosevelt, of Brussels.

is accorded them by article 17 of the international telegraphic convention signed on the 22d of July, 1875, at St. Petersburg, have resolved to conclude an agreement on this subject, and have agreed upon the following stipulations:

ARTICLE 1. A telephone correspondence service will be established and managed by the administrations of telegraphs of Germany and Belgium, between Aix la Chapelle and Cologne (Rhine) of the one part and Verviers, Liege, Brussels, and Antwerp of the other part. The two administrations are free to extend, by common accord, the telephone correspondence service between Germany and Belgium to lines or groups other than those mentioned above.

ART. 2. The conducting wires appropriated for the telephonic correspondence will be established and utilized in the best conditions known to the service. These wires will be disposed in such manner as to avoid in the greatest possible measure the effects of induction and other perturbing influence. Each of the two administrations will execute at its expense, on its own territory, the work of establishing and maintaining in order the telephone lines.

ART. 3. The circuits specially constituted to serve telephonic correspondence will be exclusively used for this service, unless otherwise decided by the two administrations. The administrations may, by common accord, use for the exchange of telephonic communications lines already used for telegraphic correspondence.

ART. 4. Telephone circuits terminating at central offices which establish communication between subscribers, posts, and public offices connected in all directions.

ART. 5. The agreement adopted, as much for the collection of rates as for the duration of communications, is a conversation of three minutes.

ART. 6. It will not be accorded between the same two correspondents more than two consecutive conversations, unless there is no other demand previous to or during the two conversations. The use of the telephone, the order by which conversation is exchanged, and the various rules of the service will be fixed by common agreement between the two administrations. The length of Government communication is not limited.

ART. 7. The rates of correspondence are fixed on the agreement of three minutes' conversation, for all subscribers, posts, and public offices forming part of lines or telephone groups directly connected with the international line. Provisionally, these rates will be fixed in the following manner: In correspondence, Aix la Chapelle-Verviers, and Aix la Chapelle-Liege, 1.25 francs, or 1 mark (23.8 cents); Cologne (Rhine)-Verviers, Cologne (Rhine)-Liege, Aix la Chapelle-Brussels and Aix la Chapelle-Antwerp, 2 francs or 1.50 marks (38.6 cents); Cologne (Rhine)-Brussels and Cologne (Rhine)-Antwerp, 2.50 francs or 2 marks (48.2 cents). The two administrations may, by common agreement, modify the tariff and fix the rates to be paid by new connections eventually to be opened.

ART. 8. The division of proceeds between Germany and Belgium will be by half for the correspondence between Aix la Chapelle-Verviers, Aix la Chapelle-Liege, Cologne (Rhine)-Brussels and Cologne (Rhine)-Antwerp. The German administration will receive 50 pfennigs or 62½ centimes (12 cents) per conversation for the line Aix la Chapelle-Brussels, and Aix la Chapelle-Antwerp, and 1 mark or 1.25 francs (24.1 cents) for the line Cologne (Rhine)-Verviers and Cologne (Rhine)-Liege.

ART. 9. The rate is paid by the person requesting the communication. Each administration will collect rates according to the manner which it deems most convenient. The receipts arising from the telephone service will be, by each administration, the object of special account, independent of telegraphic receipts.

ART. 10. Each of the contracting parties reserves the right to totally or partially suspend the telephone service for reason of public business, without being liable to any indemnity.

ART. 11. The two administrations do not assume any responsibility by reason of the service of private correspondence by telephone.

ART. 12. The stipulations of the present convention will be completed by service rules which may be, at any time, modified by common agreement by the telegraph administration

of both countries The present agreement will go into effect at the date to be fixed by the telegraph administration of the two countries. It will remain in force during three months after proclamation, which may be made by one or the other of the contracting parties.

The preceding agreement will go into effect the 15th of October, 1895.

GEO. W. ROOSEVELT,
Consul.

BRUSSELS, *October 16, 1895.*

TELEPHONE SERVICE BETWEEN BELGIUM AND HOLLAND.*

From November 1, 1895, telephonic relations will be opened between Belgium and Holland. Communications may be exchanged under the following conditions, between the telephonic group of Antwerp, Boom, and Brussels to Hal, Nivelles, and Vilvorde, on the one part, and the telephonic lines of Amsterdam, Rotterdam, The Hague, and Dordrecht on the other:

First. (a) The public telephone offices of the groups of Antwerp, Boom, and Brussels to Hal, Nivelles, and Vilvorde; (b) private establishments directing a double wire joining with one of the central telephone offices of Antwerp and Brussels; (c) subscribers of the lines of Boom, Hal, Nivelles, and Vilvorde can correspond with all the subscribers and with all the public offices of the lines of Amsterdam, Rotterdam, The Hague, and Dordrecht.

Second. The subscribers with junction by simple wire to one of the central telephone offices of Antwerp and Brussels can correspond with the subscribers and the public offices united by a double wire to one of the central offices of Amsterdam, Rotterdam, The Hague, and Dordrecht. In the chambers of commerce of Antwerp, Brussels, Amsterdam, and Rotterdam, messengers will notify members and well-known persons during exchange hours when they are called up by telephone.

The price of ordinary communications between the Belgian and Netherlands lines indicated above is fixed at 3 francs (57.9 cents) per five minutes' indivisible conversation. A continuous conversation is from five to three minutes, indivisible, during business hours at the chambers of commerce of Brussels, Antwerp, Amsterdam, and Rotterdam—that is, from 11.21 a. m. to 3.21 p. m. (Greenwich time). On Sundays a continuous conversation is uniformly five minutes.

The monthly tariff for conversation exchanged at fixed hours under subscription is fixed at 90 francs (\$17.37) per daily period of ten minutes' indivisible conversation. Correspondence of subscribers attached to the administration is not permitted between the hours of 11.21 a. m. and 3.21 p. m. (Greenwich time).

Subscription may be made from any date, but the monthly period does not go into effect until the 1st and 16th of each month.

* Translated by Consul Roosevelt, of Brussels, from the *Moniteur Belge* of October 27, 1895.

Application for subscription must be forwarded at least eight days in advance to the administration of telegraphs, at The Hague, or to the director of technical telegraph at Brussels.

GEO. W. ROOSEVELT,

Consul.

BRUSSELS, *October 29, 1895.*

IRON INDUSTRY OF RUSSIA.*

The Urals, up to twenty years ago, were the center of the Russian cast-iron manufacture, as the most favorable conditions existed there for the production, extensive beds of ore and an abundance of fuel being found there and labor being extremely cheap. The Ural founderies, however, could not keep pace with the development of Russia, and were unable to supply the immense quantities of cast iron required for the extensive system of railways. The causes of this fact are, first, that the organization of the industry is based upon antiquated principles, and, second, that the Ural producers were unwilling to reduce the high prices to which they were accustomed.

The chief difficulties in the way of a rapid development of the Ural industry are caused by the expenses of transport and management, which surpass anything known in western Europe. These difficulties are produced by the geographical position of the district where the industry is situated, its great distance from the centers of consumption, and the undeveloped state of railway communication. To these we must add the peculiar method of production, several factories being concerned in the manufacture of one and the same article, so that it must often be conveyed forwards and backwards in a half-finished state. Accordingly, attempts have long been made to give a greater impetus to the iron trade of the south, west, and north of the Empire in order to be independent, as far as possible, of foreign countries.

Efforts were especially made in this direction in the government of Yekaterinoslav, where all the conditions required for successful development of mining exist in a degree which is rarely found elsewhere. Favored with a warm climate and a fruitful soil, this tract of country contains beds of ore which yield, in some parts, 70 per cent of pure iron. Extensive beds of coal, and large quantities of dolomite and fire clay, increase the natural riches of this government. Notwithstanding these favorable circumstances, we can hardly speak of a mining industry in southern Russia previous to 1887.

The attempts to produce iron in large quantities in southern Russia date from the year 1797, but it was not until ninety years later that these assumed greater importance. The impulse was given in 1887 by the manufacturing company of Brjansk, which opened the splendidly situated factory of Alexandrov, on the Dnieper. This was followed in 1889 by the South Dnieper Company, in 1892 by the Kriwoi-Rog Company (the Granzev fac-

* Translated from the Vienna Handels-Museum.

tory), and in 1894 by the Donez Company with the factory of Druschkowski. The production of these six establishments rose from 322,439 tons in 1893 to about 416,157 tons in 1894, and will probably reach 644,839 tons at the end of 1896, so that in this short time the yearly output will have increased by 100 per cent.

The iron beds of southern Russia are very extensive, and, almost without exception, supply ore containing a very large proportion of iron. The iron beds of Kriwoi-Rog, for instance, are 33 miles in extent. The veins are, as a rule, from 218 to 656 yards in length, and 21 to 131 yards in thickness, and contain, as the case may be, 322,428 to 3,224,285 tons of ore, with a percentage of iron reaching 70 per cent.

In the year 1894 twelve concerns were working in the district of Kriwoi-Rog, all of which, with two exceptions, are conducted by mining engineers. The total output would, perhaps, amount at present to about 806,071 tons.

It may be stated in favor of the Kriwoi-Rog ore that it is comparatively free from foreign admixtures; on the other hand its fusibility is not great, about 45 per cent of flux being required to smelt it.

For the prosperous development of every industry concerned in the production of cast iron, the presence of cheap and good coal is indispensable, for more than 55 pounds of coal are required for the manufacture of each pood (36 pounds) of cast iron. But in this respect, also, the future of the southern Russia mining industry appears completely assured, as the immediate neighborhood of the iron fields—the whole Donez basin—may be looked upon as a huge coal bed. The output of coal in the year 1893-94 alone amounted to more than 5,352,288 tons. From a scientific investigation of these coal beds, it appears that their exhaustion within a measurable period is an impossibility. Limestone, also, which is not less important for the production of iron, is to be found in vast quantities on the spot.

Under these circumstances, it is beyond doubt that the near future will see an immense development of the mining industry in Russia. At present, however, the total product falls short of the requirements which are constantly increasing. The larger factories in the Urals, in the south and north of Russia, in the Moscow and Warsaw districts, are constantly overwhelmed with orders for railways (rails, iron plates, etc.), for shipbuilding, and for private industry. Moreover, in consequence of the introduction of the State monopoly of brandy in twenty-five governments, which is to commence in January, 1896, an enormous number of iron cisterns and reservoirs is required, and applications for tenders have already been made.

The total production in 1894 of cast iron in Russia amounted to 130,898 tons, which is quite inadequate to the demand. This deficiency of cast iron has been, until very lately, a constant impediment to the development of the metallic trades, which can only be redressed by the importation of foreign goods.

In the production of assorted iron and bar iron, also, the mining industry has not met the requirements, and in the case of these articles there is a great

demand, with a rise of prices. The demand for bar iron, which is used in large quantities for shipbuilding in the Volga district is very great, and can be met only with great difficulty by the home industry.

On account of this state of affairs, the overcrowding with orders of the western and southern mines, and the comparatively small results of the Ural industry, the home manufacturers are exposed to great difficulties in procuring a sufficient supply of the necessary raw material. Accordingly, at a meeting of the leading representatives of the Russian machine makers, which was held this year at the Department for Trade and Manufacture, special emphasis was laid upon the facts that the Russian iron founders will only sell their raw material at very high prices, that they only accept orders for cash in advance, and that the material supplied by them rarely meets the requirements of the machine manufacturers, either in quality or in kind, especially in the case of manufacturers of agricultural machines. "Notwithstanding the high duty on cast iron, wrought iron, and steel, import from abroad is proved to be more profitable." The Russian producer, who is favored by a protective duty of 75 copecks (25 cents) per pood (36 pounds), on finished goods, has to pay twice as much for raw material as the foreign manufacturer, which makes it impossible for him to compete with foreign producers.

The importation of foreign iron, especially from Prussian Silesia, has frequently had a regulating influence, since the commercial treaty between Russia and Germany, upon the constant tendency of prices to rise on the Russian iron market on account of the small inland competition. This influence of German iron made itself felt first on the markets of the south, west, and southwest, but extended itself afterwards, in consequence of the extraordinary cheapness of the goods, into the very heart of the Empire. At the same time the German manufacturers, by carefully observing Russian customs and adapting their assortments to the Russian requirements, have been enabled to introduce their goods into the widest circles. Favorable conditions for the importation of foreign iron and iron goods continue to exist. The German foundries are fully employed, and, in consequence of the active Russian demand (especially for iron plates of all kinds), are unable to execute all their orders, and therefore constantly require longer periods of time to carry them out. This would be a very favorable opportunity for the Austrian iron founders* to extend their sales in Russia and to supply at least a part of the demand of that country, which still shows a tendency to rise and will probably continue to do so for a considerable time. By sending representatives as early as possible, by observing most carefully Russian usages, and especially by charging low prices, Austrian manufacturers will be able to increase considerably their business connections with Russia and bring about permanent relations. Activity and small profits have always led to success. It will be also desirable—of course, with due caution—to effect credit sales on the most favorable terms possible. This is of special importance in the case of agricultural machines. By this means the

*For the American founders as well. (Note by Consul Stephan.)

foreign product will be placed in as favorable a position as the Russian, which, as is well known, can be pledged at the State bank.

It may be mentioned here that the *semstvos* (local boards), when purchasing foreign scythes and plows, have adopted a system which seems calculated to abolish (where the supply of Austrian scythes is concerned) the customary and often unadvisable Russian commission trade. For this purpose, the *semstvos* have established their own stores in Wjatka, Perm, Ufa, Kostroma, Samara, and Nijni-Novgorod in order to provide the peasants with cheap agricultural implements. Formerly, the peasants bought scythes from the Russian agents at 1.25 rubles (44 cents); plows at 33 rubles (\$14.56); now the *semstvos* supply the scythes at 55 copecks (19 cents), and the plows at 23 rubles (\$8.12) including carriage. It is a well-known fact that these goods, which are supplied so much more cheaply, are imported by a German firm. Considering that in this way foreign products must become more popular and be more widely diffused, it is advisable to pay greater attention to this matter, and Austrian manufacturers will find it worth their while to occupy themselves with the question, and to enter into similar relations with the *semstvos*.

Notwithstanding the undeniable increase in the production of cast iron, the Russian manufacturers are still forced, on account of the high prices in their own country, to obtain a great part of their raw material from abroad. It will be interesting, therefore, to conclude our remarks by making more generally known the details lately published on the subject of the import of German machines into Russia in the first half of 1895, from which it appears that this import has more than doubled since 1893. This import shows a very satisfactory advance for the first half of 1895. On comparing the amount of the eight most important articles with those of the two previous years, we have the following result in double centners (220.46 pounds).

Kinds.	1895.	1894.	1893.
<i>Iron and ironware.</i>			
Corner and angle iron.....	139,791	87,708	61,671
Rod iron.....	438,450	297,554	197,991
Plates and sheets.....	196,837	108,054	84,315
Coarse iron goods.....	66,943	49,442	47,085
Total.....	842,021	542,758	391,062
<i>Machines.</i>			
Locomotive engines and railway locomotives.....	5,216	1,922	1,502
Machines:			
Cast iron.....	112,881	73,961	50,233
Wrought iron.....	13,149	10,240	9,926
Sewing.....	6,846	4,895	2,975
Total.....	138,092	91,018	64,636

This result is the more remarkable, as, in the first half of 1893, prohibitive duties on German commodities did not exist in Russia. These figures, therefore, show very plainly the considerable advance which has been

made in the import of German iron since the time which preceded the tariff war.

From the subjoined figures will be seen the proportion of German goods supplied to Russia to the total export of Germany:

	Per cent.
Corner and angle iron.....	17.7
Rod iron.....	30.6
Plates and sheets.....	35.
Coarse iron goods.....	12.6
Locomotive engines and railway locomotives.....	17.6
Machines:	
Cast iron.....	25.4
Wrought iron.....	18.
Sewing.....	15.7

These details have been given in order to show that in this branch of trade there is an opportunity of exporting in large quantities to Russia if the right measures are taken. It must certainly be admitted that the Germans being our competitors, our difficulties are greater, but it would be worth while making the attempt to profit by the present favorable position in Russia.

THEODORE M. STEPHAN,

Consul.

ANNABERG, *September 26, 1895.*

IRON INDUSTRY OF SWEDEN.

Some days ago, a meeting of the Swedish Society of Ironmasters was held at Gothenberg, at which an account was given of the state of the Swedish iron trade. The export of iron and steel from the beginning of January to the end of July of this year amounted to 133,500 tons, against 114,295 tons for the same period last year. On July 1 of this year 68,066 tons were lombarded in the banks, against 76,885 tons last year. In the second quarter of the current year 132 blast-furnaces were working, against 129 last year; 291 bar-iron furnaces, against 342 last year; 28 bessemer furnaces, against 24 last year; and 25 Siemens-Martin furnaces, against 24 last year.

Total production.

Kinds.	April to June—		January to June—		January to June—
	1894.	1895.	1894.	1895.	1895.
	Tons.	Tons.	Tons.	Tons.	Tons.
Pig iron.....	127,846	131,057	263,125	264,568	+ 1,443
Slabs.....	55,658	44,347	109,290	91,588	—16,702
Bessemer steel.....	22,025	26,858	41,628	52,123	+10,495
Siemens-Martin steel.....	21,295	23,606	39,482	47,456	+ 7,974

The average export from January to June during the last ten years was : Pig and ballast iron, 22,890 tons ; coarse cast-iron goods, 2,143 tons ; slabs and unwrought bars, 4,697 tons ; bar iron, 69,767 tons. Of bessemer steel, 52,123 tons was the greatest export during the last six years, and of Siemens-Martin steel, 46,456 tons. As the report states, the figures representing the exports for this year show a very satisfactory increase. From all parts the iron works are comparatively well supplied with orders. Though part of these orders, especially on pig iron, are still of last year, the past months have added considerable new orders, so that the greater part of the finer pig iron is probably disposed of. There is said to be a good demand for steel at better prices. The market for Lancashire iron has become firmer, owing to the increased demand, but, although of late far higher prices have been obtained than in the spring, it can not be said as yet that this production brings great profit to the works. Evidently, however, buyers of Swedish Lancashire iron have shown more confidence than in former years, so that with a limited supply we may expect a continuance of firm prices.

According to all the reports received, we may look forward, not indeed to a rapid rise, but at least to a steady, sound development of the iron trade in the great civilized countries, and consequently a firmness in prices of iron and steel.

The quotations (free on board, per ton, without discount) of the society were fixed as follows, to be in effect from September 1 :

Description.	Gothen- berg.	Stock- holm.
Ordinary iron :		
Wrought.....	\$38.88	\$38.27
Milled	36.45	35.23
Milled fine iron.....	36.45	35.84

THEO. M. STEPHAN,

Consul.

ANNABERG, *September 22, 1895.*

THE CURRANT TRADE OF GREECE.

There is much popular agitation in Greece at present resulting from the low price of currants, the principal crop of this country. A general idea has spread among the people that the Government is able to raise the price of the crop at will, and there is a popular demand that Parliament pass some measure to that end. Large mass meetings are being held in various parts of Greece, and considerable excitement prevails.

This idea that the Government is able to control a matter usually considered dependent upon natural and international causes, will no doubt interest agriculturists in the United States.

The currants are low in price, mainly because there has been overproduction. If all the farmers in the United States for some one year should plant all their land to one crop, the price of that crop would fall. This is practically what has happened in Greece.

At the time when the phylloxera totally destroyed the vines of France, and before California had begun to outstrip the world in the quantity and quality of her grapes, there arose a great dearth in this fruit. In France, especially, where wine making is a most important industry, was the dearth felt. The consequence was that the Greek currants, which are excellent for the manufacture of wine or cognac, came into great demand and rose to a high price. It must be remembered that the drachma at that time was at par and equal to 1 franc in gold (19.3 cents United States currency), and that 50,000,000 francs a year were sent into Greece, mostly for currants. As a result, the agriculturists of this country lost their heads. Then began a ruthless destruction of fruit and olive orchards, and a wholesale planting of vines. One can easily understand how great their enthusiasm must have been when he reflects that an olive tree requires years equal to an average human life to come into good bearing condition, and that large forests of mature olive trees were cut down in Greece. In Morea, also, many mulberry trees were destroyed, thus injuring the silk industry. In the haste to get large quantities of the profitable article on the market arose another condition that ultimately injured the price of the crop. Inferior currants were packed and sold as first class, and in many cases sand even was sprinkled in the boxes to add to the weight.

What is now the condition of affairs? Greece has but one crop, and there is no great demand for that. Her olives and olive oil, superior in natural quality to those of Italy, are unknown abroad, and refineries scarcely exist; Greek wines, which, properly managed, should equal those of France in reputation, have been neglected; silk making as an industry has almost disappeared; garden vegetables, which grow here of surpassing quality and flavor, are raised only in a few localities near Athens; raspberries and blackberries are unknown; strawberries are few and high in price, and there is not a fruit cannery in Greece.

In the meantime, the French have renewed their vines with vigorous American stock, and California's horn of plenty overflows for all the world. There is no demand for Greek currants, except for such as are used in the kitchen.

Last year the price had fallen to 80 drachmas per 1,000 liters, and the drachma is now much below par. The measure which the people have been most loudly demanding of the Government is known in Greek as "parakratesis," perhaps best translated into English as "retention." The scheme in full is as follows: They demand that public depots shall be built for the storage of the currants, and that only a certain percentage of the crop, to be fixed by law, shall be put on the market. Thus they hope to prevent glutting the market and to keep prices up. The surplus currants are to be

put in the depots and not sold until the loose crop is disposed of. In connection with this, a currant bank is to be established, from which any shareholder can draw sums of money at need, corresponding with the quantity of currants deposited by him in the depot.

This scheme has been brought twice before the Parliament, and twice rejected, and the people in the currant districts are clamoring for it more loudly than ever.

The conduct of the inhabitants of Ægion, near Patras, contrasts sharply with that of the people of the other currant-raising districts. As prices have lowered, they have devoted their energies to improving the currants and the mode of packing. They select them carefully and put up three grades, and for the best grade they still receive from 300 to 400 drachmas per 1,000 liters. It is needless to say that the people of Ægion are not interested in the "parakratesis" measure. They can sell all of their crop readily and do not wish any of it held back in depots.

The best Ægion currants are black, shiny, and soft. When pressed together in the hand they do not adhere, but spring out again to their natural shape. The Board of Trade of Patras originated the "parakratesis" idea. The Government has appointed a committee to examine into the currant question and see what can be done. In the meantime, it is a hopeful sign that a few of the more intelligent farmers are experimenting with a variety of crops. If the "parakratesis" idea is ever put into effect, the agriculturists of the United States will no doubt be interested in watching the experiment. If applicable to currants, it might also be applied to wheat.

Up to the present time, however, the only lesson seems to be that there is safety in a variety of crops, and that higher prices are always obtainable for a superior article.

Messrs. Barff & Co., large shippers of currants, have published a memorial to the Government in favor of the "parakratesis." They say among other things:

Experience shows that whenever the market of any product is glutted the price falls, not in proportion to the oversupply, but much lower. The next crop will amount to from 170,000 to 180,000 tons. At the time when it is ready for delivery, there will be a deposit in the islands and in Greece proper of 10,000 tons; in England, 15,000 tons; in Germany, America, and Russia, 15,000 tons; total, 210,000 tons. The consumption, under the most favorable circumstances, will not exceed in England 60,000 to 65,000 tons; Russia, 35,000 to 40,000 tons; America, 15,000 to 20,000 tons; Germany and Holland, 20,000 to 25,000 tons; Austria, 3,000 to 4,000 tons; Canada, 2,000 to 3,000 tons; Australia, 1,000 to 2,000 tons; France, 10,000 to 15,000 tons; a total of 136,000 to 174,000 tons. Thus there will be an overproduction of from 45,000 to 65,000 tons; therefore a holding back from the market of from 45,000 to 50,000 tons would prevent glutting, and would keep up the price. In the meantime, perhaps the demand, especially that of Russia, might increase.

GEORGE HORTON,

Consul.

ATHENS, *July 20, 1895.*

GREEK CURRANT LEGISLATION—SUPPLEMENTARY REPORT.

The law recently passed by the Greek Parliament for controlling the price of currants, has been put in force. According to its provisions, every producer of currants must pay a tax of 15 per cent of his crop, said payment to be made either in kind or in money. If made in money, the tax will be assessed at the rate of 90 drachmas per 1,000 Venetian pounds of currants; if made in kind, currants can be offered equal to 15 per cent in weight of the producer's crop, but of a quality inferior to that crop. It is only necessary that the quality does not fall below 90 drachmas per 1,000 Venetian pounds in value. This provision is to prevent injustice, as the currants raised in the different parts of Greece vary greatly in value.

Depots and stores are being rented by the Government to receive the currants of those producers who may see fit to pay the tax in kind.

On the 20th of August the director of customs at Patras telegraphed to the Minister of Finance that 23,000,000 Venetian pounds of currants were awaiting shipment at that port. It is supposed that the entire crop this year will amount to something over 300,000,000 Venetian pounds, as compared with 378,134,782, 254,382,093, 295,382,874, and 322,161,577 pounds for the years 1891, 1892, 1893, and 1894, respectively.

Taking the estimate of 300,000,000 pounds for 1895, we have, at 90 drachmas per 1,000 pounds, a money value of 27,000,000 drachmas, 15 per cent of which is 4,050,000 drachmas, which should be the Government's income from the tax. This figure must be reduced somewhat, however, as the Government has agreed to reduce the existing tax from 19 per cent to 16 per cent, and from 16 per cent to 12 per cent, according to the quality of the currants.

An official of the Government has made me the following hypothetical calculation: If the Government gains from the new tax 5,000,000 drachmas, and if it loses from the reduction of the old tax 1,200,000 drachmas, there will be a clean gain of 3,800,000 drachmas. If such a result should be obtained, then the much-talked-of "currant bank" will be possible. Every producer who deposits a certain amount of currants in the Government depot will be entitled to draw money from the bank, or to hypothecate his crop. Interest will be fixed at the low rate of 7 and 8 per cent, whereas it now ranges from 80 to 100 per cent. It is the bank feature of the so-called "retention law," which is most deeply interesting the Greek farmer.

The currants which the Government receives are to be put to other uses than those for which the currant is usually sought in commerce. For instance, Greek currants are sought in the United States for the making of pastry. If a large percentage of the crop were consumed in Greece in cognac manufacture, the lesser quantity put on the American or English market would bring a higher price.

GEORGE HORTON,
Consul.

ATHENS, *September 1, 1895.*

GREEK CURRANTS IN THE UNITED STATES.

I inclose a translation of a report on currants, which Mr. Botassi, consul-general of Greece at New York, has recently sent to his Government. The report has been published here in the Official Gazette and in many newspapers.

E. ALEXANDER,
Consul-General.

ATHENS, *December 9, 1895.*

MR. BOTASSI TO THE GREEK MINISTER OF FOREIGN AFFAIRS.

Wishing to increase as much as possible the importation of currants into the United States, I have recently addressed a circular letter to the principal importers of that fruit, requesting them to give me their opinion as to the best means of obtaining the desired object.

In the circular, I asked the following questions:

- (1) What is the best quality of currants for consumption in the United States?
- (2) What is the best way of cleaning and preparing the fruit in Greece for exportation?
- (3) What are the most suitable receptacles for packing currants for export—their size, weight, etc.
- (4) What marks should be used to distinguish the different qualities, and to show the place where the fruit was grown?

The answers received may be summarized as follows:

(1) The best currants are those which come from Philicatra, Amalias, Patras, Pyrgos, and Kalamata (the last mentioned, if carefully cleaned), and, in general, the fruit known as "provincial," when of good quality. Only small quantities of currants produced in Ægion (Vostitza) and the Kolpos district are wanted in the American market.

(2) Currants must be carefully cleaned, and must not contain earth, sand, or stones; above all, they must not be wetted at the time of packing. The condition of the fruit imported some time ago was such that it had to be cleaned again before it could be offered for sale. This requires no little expense, and, therefore, makes currants dearer, thus hindering their consumption. If currants should come to us in better condition, the amount consumed would greatly increase. They ought to be freed from earth and other impurities, and from inferior or decayed berries. Some of the large stores have them cleaned by washing, and the fruit thus cleaned and prepared for immediate use is packed in dainty paper boxes containing 1 or 2 pounds, and can be sold for three or four times the original price. I have tasted the "provincial" currants when thus prepared, and it was difficult to distinguish them from the best currants of Ægion.

(3) No fault is found with the prevailing system of shipping currants in barrels, half barrels, boxes, and half boxes; but the weights should be as follows: Barrels, 300 to 325 pounds; half barrels, 150 to 175 pounds; boxes, 120 to 130 pounds; half boxes, 60 to 70 pounds.

(4) The quality of each barrel or box must be uniform. If possible, the fruit should be divided into three principal classes—good merchantable quality, choice, and fancy, so that consignees may be able to offer it for sale on the basis of this classification. An expert officer of the Government should examine the quality at the time of the lading, and issue an official certificate, to be annexed to the invoice or bill of lading. On no account must water be used during the packing, as it injures the quality of the fruit.

Besides the opinions sent to me in writing, I had interviews with leading importers, all of whom called my attention to the lack of cleanliness in the fruit, of which they all complained. They told me that currants, as they usually come to America, can not be retailed at once for cooking purposes, but must first be cleaned and washed. The washing can not be done in Greece, because the fruit would thereby be injured during the voyage, but other cleaning may easily be done there.

If the currant merchants of Greece understand that their interests will be furthered, both in increased prices and increased consumption, they will pay proper attention to the matters mentioned in the foregoing.

If the Royal Government approves, it might be desirable, Mr. Minister, to publish the contents of this report.

D. BOTASSI

Consul-General.

NEW YORK, *October 15-27, 1895.*

NOTES.

The Reeves Sewerage System.—Under date of December 12, 1895, Consul Meeker, of Bradford, transmits the following information, supplied by the London management of the Reeves sewerage system:

Some half dozen years ago the town of Sutton, in Surrey, laid down a system of drainage with outfall precipitation works and form for land filtration of the effluent. Every "modern improvement" was adopted, and all that money and professional skill could do were done in order to make the sanitation of the place perfect. It was not long till it was found that this end had not been accomplished, and the council, on the recommendation of the eminent chemist, Mr. Dibdin, who, at the time, was the chairman of the Sutton sanitary committee, resolved to try the Reeves system on their low-level sewers, which were causing much trouble. For two years now the low level has been on the Reeves system without any complaint. On the other hand, the high-level sewers have given so much trouble that the council quite recently have begun the application of the Reeves system to it.

As regards our outfall treatment, we are at present fitting our system at the Sutton works, so that after next week it may be seen practically at work not only in the street drains, but giving a pure effluent at the tanks.

The advantages of the Reeves system may be stated thus: We begin our treatment immediately the sewage enters the street drain or sewer. The sewage is thus at the very outset chemicalized and rendered harmless and inodorous, and the formation of all noxious gases is prevented. This insures neither nuisance nor danger throughout the entire system. The obvious consequence of this is that the engineer, in laying down his drainage plan, has a much simpler problem with which to deal than when he has a dangerous, noxious liquid to carry off. We therefore not only give perfect sanitation, but, where the drainage is being laid new, at less cost for engineering, sometimes phenomenally less.

As regards our outfall treatment, the sewage arrives at the works two-thirds treated as far as chemicals are concerned. By further treatment we precipitate impurities, and, straight from the tank, give a clear effluent. Land filtration is not a necessity with us; small space is therefore required for our works. Our sludge forms a manure of considerable value.

Compared with the system you have reported on,* this will be found to be cheaper in every way, and, in addition, it preserves all the value of the azote for the land, and, what is of the greatest consequence, insures pure air throughout the sewerage. The real test of the sanitary state of a town is the sickness rate; we not only lower the former, but also the latter, by doing away with sewer emanations.

Cocoonut Culture in Venezuela.—Under date of Puerto Cabello, October 1895, Consul Proskauer transmits the following information relative to the cultivation of cocoanuts in Venezuela:

Cocoonuts are indigenous to the sandy soil of the seacoast, requiring the warm and equable temperature of the tropics. The coast belt of Venezuela possesses not only these and every other requisite condition, but unusual facilities for the shipment of the fruit to some central point. For hundreds of miles the coast presents a narrow, flat surface, in many places

*Sewerage in Bradford, CONSULAR REPORTS No. 173 (February, 1895), p. 173.

extending some distance back, and the mountainous formation in other places is equally well adapted for the prolific production of the fruit.

All the soap factories rely, to a great extent, upon their own groves for the oil from which they manufacture their product; but these groves are an insignificant patch when compared to the waste and barren lands, unfit for any other agricultural purpose, and "to be had for a mere song."

The palm of Venezuela requires four years to attain the fruit-bearing period, after which time its producing power is enhanced year by year until its full maturity is reached, about its eighth year. It then produces for forty years. From seventy-five to one hundred trees are planted to the acre, yielding fully 300 to 350 cocoanuts per tree per annum. The profit of the small producer is not less than \$1 per tree per annum. The large grower, handling and shipping his fruit (saving one or two middlemen's charges), would undoubtedly double that figure.

The palm, while a tree of exquisite beauty, yields one of the most nutritious and useful fruits known. As an article of food it is greatly relished; industrially its principal use is in the manufacture of an excellent quality of soap, the cocoanut oil being preferred to fat because of its ability to absorb much more water than the latter. I do not intend, however, in this report to discuss specifically or call attention to its many uses, but simply its application to a suggestion the vice-consul made to me.

The husk of the fruit is now used, to a very limited extent, as fuel, or it is permitted to go to waste. It would, therefore, seem that in countries such as Venezuela and its neighbors, where carpets or other woolen or cotton floor coverings are discarded and nothing but imported mattings used, the manufacture of the fiber of the husk into cocoa matting on the spot would prove profitable, from its export, its sale in these countries, and the exportation of the surplus cleaned fiber to the United States. Such an enterprise, aside from the possession of its own inherent excellence and elements of success, would, no doubt, receive great consideration from this Government, so as to give its infancy an encouraging and substantial support. Venezuela has often increased the duty on imported articles, when its own products were attempted to be utilized in competition with the foreign manufactures, and I believe this would receive like governmental aid.

Discharging Cargo in San Juan del Norte.—Under date of December 3, 1895, Consul O'Hara reports as follows relating to the discharging of cargo in San Juan del Norte:

Since the loss of the tug *Coburg*, in June, 1895, there has been no tug in this harbor. The *Coburg* was owned by the Nicaragua Mail Steam Navigation and Trading Company. This company has had a new tug built in the United States, and it is said that the tug will be here sometime during this month. When the *Coburg* was in commission, steamships arriving at this port anchored about 2 miles from the mouth of the San Juan River, and their freight was discharged on lighters, which were towed into harbor by the *Coburg*. The local merchants had no particular complaint to make of the lighterage charges. Since June 18, vessels having large cargoes for San Juan del Norte have discharged the same at either Bluefields or Port Limon, and the cost of getting freight to this place has been as follows, the rates being given in United States currency:

Flour.....	per half barrel...	\$0.30
Kerosene.....	per box of 10 gallons...	.30
Lumber.....	per 1,000 feet...	10.50
Brick.....	per 1,000...	10.50
Beer.....	per 6 dozen pints...	.45
Chairs.....	per half dozen...	3.00
Miscellaneous freight.....	per ton...	7.00

The Nicaragua Mail Steam Navigation and Trading Company owns a small steamship of light draft, and since the loss of the *Coburg* this vessel has been employed in carrying San Juan del Norte freight from Bluefields and Port Limon to the mouth of the Colorado River, the vessel being able to cross the bar and enter the river. The freight has been discharged at a warehouse at the mouth of the river, and has thence been carried by river steamers to San Juan del Norte. The local merchants have complained of the rates charged since June 18, and two local importers, viz. H. F. Bingham and E. L. D'Souza & Bro., have ordered a new tug which will be here from the United States in January. According to the books of the Nicaragua Mail Steam Navigation and Trading Company, the lighterage charges on all goods landed in San Juan del Norte during the last thirteen months, including goods destined for the interior of the republic, amount to \$14,500.

Under date of December 26, Consul O'Hara reports the arrival at San Juan del Norte of the steam tug *Rosita*, mentioned in the foregoing report, and adds:

The tug was built in the United States, is constructed of steel, has two propellers, is 71.2 feet in length, has a beam of 18.2 feet and a tonnage of 57.32, and has a draft, when loaded, of from 3½ to 4 feet. A register was issued at Philadelphia November 30, 1895, showing Albert Thieriot, of New York city, to be the sole owner of the *Rosita*, but the tug was built for and is owned by F. A. Pallas, who has resided here for twenty years and is now engaged in business at this place under the name of the Nicaragua Mail Steam Navigation and Trading Company. Mr. Pallas is an Italian subject.

Aluminium in Austria.—Under date of December 18, 1895, Consul-General Judd, of Vienna, reports to the Department, in reply to an instruction to that effect, that a corporation known as the Aluminium Industrie Actiengesellschaft some years ago purchased the right to use certain water power in the neighborhood of Salzburg, and may, if the demand for aluminium increases, build works in Austria, but at present no such works are in existence.

Aluminium in Switzerland.—In answer to an instruction from the Department, Consul Gifford, of Basle, under date of December 19, 1895, transmits the following information:

On inquiry, I learn that the Aluminium Industrie Actiengesellschaft, which has a large and profitable establishment at Neuhausen, near the Rhine Falls, intended at one time to utilize for a new plant, near this city, the Rhine canal, which it is proposed to build from Rhinefelden to Basle. But the enterprise is said to have been abandoned before anything had been done to carry it into effect, and even the canal, by means of which the electric force was to be supplied for the new works, has not yet been begun. Accordingly, it will be only after several years, if ever, and as the result of a new enterprise, that aluminium will be produced at this point.

American Trade in Sonora.—The following report has been received, under date of December 27, 1895, from Consul Frank W. Roberts, of Nogales:

It is a surprising fact that American business men of all classes persistently ignore the opportunities presented for trade and traffic of all kinds in the State of Sonora, thus permit-

ting the same, to a great extent, to pass into the hands of Europeans. In a mercantile way the business men of the United States have closed their eyes to the fact that the merchants of Sonora, with few exceptions, are among the most substantial and reliable in the world. Numerous houses can be named which command an extensive trade, carry tremendous stocks, buy their goods by the shipload, at all times carry a good margin of ready cash, have outside resources of great productive value, and are eminently capable of carrying to a successful issue any undertaking in which they may see fit to embark. Close relations should be cultivated with such establishments by the business men of the United States.

In a mining way, Sonora offers a vast and virgin field to American capital. The great gold lode at Minas Prietas is but in the infancy of its development, and it has already produced many millions. Those who are posted assert that there are a number of such lodes in Sonora which need only to be developed by those having the requisite capital to make them rivals of the Prietas lode, and nowhere in the world can mining operations be conducted more cheaply. Close proximity to tide water gives cheap freights on tools, machinery, timber, and other necessities, and all labor needed can be had for very small wages. The same kind of work for which mining operators in Colorado and California pay \$2.50 to \$4 per day in gold, is obtained in Sonora for \$1.50 to \$2 per day, in Mexican silver, worth at the present time only about 53 or 54 per cent of our American currency. The expert is paid in gold at about the same rate as in California, but that is the smallest part of the cost of operation of a mining property. A larger margin of profit can thus be realized from lower grades of ores, and the State is ribbed with ledges which will produce high-grade ores.

In the great enterprise of irrigation, development, and cultivation of the natural resources in agriculture and horticulture there is a vast and virgin field to be occupied. On the Yaqui River, the Sonora and Sinaloa Irrigation Company has about completed its great canal which will reclaim nearly 400,000 acres of land. But the great work of colonizing and bringing into productiveness all that vast tract of fertile soil remains to be done. Numerous similar projects of great magnitude and importance are capable of development in Sonora, none of which should be neglected or overlooked by American capital.

Oranges in Sonora.—Consul Roberts, of Nogales, under date of December 21, 1895, transmits the following information, taken from a local newspaper, relative to the orange crop of Sonora:

Prospectors from New York city, who recently visited the State of Sonora, found there a large crop of ripe oranges of good size and color, which could be shipped to arrive in that market about the usual time of the arrival of the first invoices of Florida oranges. The Mexican crop has hitherto been consumed west of the Mississippi River, but it seems this year to be almost wholly under the control of a few large fruit firms in Baltimore and Kansas City, who were among the earliest seekers for oranges in Sonora, so it is doubtful if more than 50,000 or 60,000 boxes will be available for that market. Sonora oranges are better than those of Jalisco. An invoice of Mexican oranges was sold in Chicago a few days ago for from \$3.15 to \$3.55 a box, which are considered high prices for this time of year, and are equal to 2 cents an orange at wholesale.

Santiago-Cienfuegos Cable.—Consul Hyatt, of Santiago de Cuba, reports, under date of December 31, 1895, that the Cuba Submarine Telegraph Company (limited), an English company, now having a cable direct between Santiago and Cienfuegos, thence overland to Havana, have laid a new cable between Santiago and Cienfuegos, which will be put into operation this

week, the same touching at all the important intervening southern ports of Cuba, viz, Manzanillo, Tunis, Jucaro, Santa Cruz, and Casilda. This new cable, according to the information obtained by the consul, was laid at the request of the Spanish Government, and will be of considerable assistance to it in directing the movement of troops.

British Trade Advertising in Japan.—The consul-general at Kanagawa (N. W. McIvor), under date of November 25, 1895, transmits to the Department copies of the British Trade Journal, printed in Japanese, and intended as a medium for the advertisement of English productions which can be sold in Japan. The Japan Daily Mail of November 21, 1895, refers to this publication as follows:

The second number of the British Trade Journal in Japanese (Eikoku Shogyo Zasshi) is lying before us. It is a well-translated and well-printed reproduction of the English periodical, and is to be issued every three months in Tokyo. Besides the advertisements, which occupy the greater part of the publication, and which doubtless are the principal object, the text contains more than twenty pages of closely printed matter dealing with commercial and manufacturing subjects. In the leading article, the editor dwells upon the extremely hopeful position of Japanese commerce. Even without the late war with China, the industrial and commercial development of Japan was destined to be rapid and promising, and the victories obtained by her troops on land and sea have furnished an additional means of introducing her to the world. Whether the unique advertising influences of the war will be turned to full account depends upon the activity of the Japanese in taking advantage of the present splendid opportunity.

Conneaut-Port Dover Trade.—Commercial Agent George B. Killmaster, of Port Rowan, Ontario, under date of December 12, 1895, transmits the following information relative to the establishment of a ferry line between Port Dover, Canada, and Conneaut, Ohio:

The first transfer steamer, the *Shenango No. 1*, commenced running on this route in August last. Her dimensions are as follows: Length, 300 feet; beam, 54 feet, and depth of hold, 25 feet. She has room on her lower deck for 28 cars. From the time she started in August until November 21, she had brought to Port Dover 1,354 cars of coal, 78 cars of iron ore and manufactured iron of all kinds, 2 cars of stone, 3 cars of pumpkins, 2 cars of walnut logs, and 1 car each of lumber and coke. The customs duties collected at Port Dover on merchandise brought over by this ferry, for the month of October, amounted to \$6,673.20. The second boat, named *Shenango No. 2*, has just been put on the line. It is expected that these boats will make two round trips every day in the year, and it is estimated that they will bring from Conneaut 300,000 tons of freight a year. While this line was established principally for the coal trade, these boats will also do a general freight and passenger business. I have not been able to obtain any information regarding the freight carried so far from Port Dover to Conneaut.

I have reported the harbor improvements fully to the hydrographic office at Cleveland, Ohio.

Owing to the prevailing low water in Lake Erie this year, it was found that the ferry slip at Port Dover was not deep enough. As it is now dredged to the rock, any further work

entails a much larger expenditure than was at first estimated. The work of drilling and blasting the rock has, however, been commenced, as it is absolutely necessary to have more water.

Sanitary Regulations for Printing Establishments in Germany.—Under date of September 27, 1895, Consul Stephan, of Annaberg, transmits the following:

A conference of proprietors and employees of printing establishments, called together by the Government, was held in Berlin at the beginning of August to discuss the condition of the workrooms in printing houses and type foundries, and to agree upon sanitary orders to be issued. It is interesting to note how the conference arose. When the printers undertook their great strike in the winter of 1891-92, which ended in failure, the workmen declared, among other things, that the printers had inscribed the nine-hour day upon their banner primarily because the sanitary condition of certain printing establishments was beyond all description. The Government decided to institute an inquiry into the diseases peculiar to the trade and the causes of deaths among the printers. They applied, for this purpose, to the local sick funds, and received from these information which was certainly far from satisfactory—one-half, or even two-thirds, of the employees were said to be suffering from lung diseases. It is admitted by the employers that some small presses are set up in unhealthy rooms; on the other hand, the large newspaper presses are established on the most suitable premises which one could desire. Excellent arrangements are made for light and air, and new improvements are constantly being made. The Government has drawn up sanitary regulations for the printing establishments, and the conference was to express an opinion upon them. Representatives from all large printing places were present; several delegates of the trades union were also in attendance to consider the Government scheme. On the whole, the bill met with approbation; it was drafted so as to bring the larger establishments within the requirements, leaving only the smaller concerns yet to comply with the law. This arrangement, however, did not meet the wishes of the workmen's representatives.

A New Material for Roads.—Consul Monaghan, of Chemnitz, under date of October 19, 1895, reports the following:

Even here, where the roads seem little less than perfect, the tireless spirit of progress has produced new materials for making good roads. Among these is one by Otto Pötsch, of Chemnitz. His system, for such it may be called, consists of a very simple process. Instead of "squaring" stones on all sides as hitherto in other processes, he squares only one side (the upper) and builds in all the rest with artificial stones made of gravel and portland cement. By this method he reduces cost of material, avoids the many evils incident to sand beds on which roads have often been built; does away with the ramming or pounding, gets an elasticity hitherto unknown, and does away with the long delays and inconveniences always necessary when building new streets or repairing old ones under the old system. After selecting such stones as seem best suited to the kind of road to be built, and having evened or squared off one side or surface, they are placed in molds upside down and filled in with natural stones about one-third to one-half inch in width, the big ends down; over these is poured mortar, made of one part of slowly hardening portland cement and one and one-half to two parts of clean sharp gravel sifted to from 5 to 20 millimeters (0.197 to 0.787 of an inch), mixed as follows: Clean water and cement, mixed till pretty stiff; then add the gravel, which should be wet before being added. A preparation that will dry in one-half to one hour (hence not demanding many molds) may be made from a mixture of slow-drying portland cement and quick-drying (hardening) roman cement, but it will not be as good or as firm as the other.

The stones used must be clean, since cement clings only to clean surfaces. The mass must not be removed from the molds for twenty-four hours; then they must lie four weeks before being used. The molds may be made of wood or sheet iron. In order to avoid the sticking of cement to the sides, the latter should be smeared with pitch, tar, or some such substance. It is hardly necessary to point out the simplicity of the system. By this process the artificial costs one-third to one-half less than natural stone, and is very much better for all purposes, being more durable, more even, more elastic, less liable to weather influences, and, above all, easy to make.

A New Table.—Consul Monaghan, of Chemnitz, under date of October 20, 1895, reports the introduction into that market of a new table:

It may first of all be used as a dining table, or as a salon table. After dinner the cover may be swung back and one has a billiard table; open a little door at one end and a small bowling alley, fully equipped, is at hand; pull again and a bagatelle, tivoli, and ten-pin board appear; pull again on all sides and ends, and tables for writing and drawing to the number of six are in sight. Then there are drawers for balls, pins, knives, forks—in fact, for anything that one may wish to put under lock and key. I can conceive of nothing better calculated to keep boys in their own homes evenings than this table. It is a source of constant comfort and enjoyment. Of course its cost here is hardly to be taken as a basis for calculation in the United States; still, considering the cheapness of wood with us and the greater producing capacity of men and machines, I see no reason why such a table should not be produced in our country just as cheaply as in this. In large cities, where rents are high and tenements are limited to very few rooms, it would prove of great value.

A Business Visit to South America.—In a dispatch dated Buenos Ayres, October 30, 1895, Minister Buchanan invites the attention of the Secretary of State to a proposition for a visit to the Argentine Republic of a body of representative men from prominent commercial organizations of the United States. Mr. Buchanan believes that there will be no difficulty in securing the names of a sufficient number of prominent manufacturers willing to make such a visit, and feels certain that the good results obtained will amply satisfy the visitors and the organizations they represent. Having brought the subject to the attention of the Foreign Minister of the Argentine Republic, and finding him in favor of the idea, he wrote to him in order to ascertain to what extent his Government would recognize such visitors, and received a most gratifying reply. He requests that Secretary of Legation Fishback, who first suggested the plan, and who will be in Washington in a short time, should be permitted to explain more fully his (Mr. Buchanan's) ideas on the subject. Mr. Buchanan thinks that if such a party visits the Argentine Republic it would desire also to visit Uruguay and Brazil, and has requested Mr. Fishback to bring the subject to the attention of Ministers Stuart and Thompson on his way home. Mr. Buchanan's object is to extend our trade, which he thinks can be done by bringing about a better understanding between the commercial men of both countries.

Minister Stuart writes from Montevideo, under date of December 19, 1895, that Mr. Fishback, secretary of legation at Buenos Ayres, who is re-

turning to the United States on leave, visited Montevideo on the mission referred to in Minister Buchanan's dispatch of October 30, 1895. Mr. Fishback, adds Mr. Stuart, intends while in the United States to endeavor to have delegations from the boards of trade of our leading cities visit Argentina, Brazil, and Uruguay, so that, after seeing for themselves the resources and products of these countries, they may take steps to secure a portion of the trade which at present goes to Europe. Wishing to obtain some official assurance that the delegations would be cordially received, and facilities given them for the accomplishment of the end in view, Mr. Stuart, in company with Mr. Fishback, called upon the Minister of Foreign Affairs, and, explaining the matter to him, received a cordial assent. The interview was followed by a note to the Minister of Foreign Affairs on the subject, in which Mr. Stuart said he was persuaded that their views were the same in regard to the advantages that would accrue to the commerce of both countries as a result of a more intimate acquaintance between the leading men from commercial centers, and that the Minister of Foreign Affairs would agree with him that the realization of the proposed visit would conduce in the highest degree to the strengthening of the friendly relations that so happily already existed between the two countries. He asked whether he might feel authorized to assure the commercial organizations in the United States that, in the event of the visit, the Uruguayan Government would be disposed to receive the delegation and render such assistance as would enable them "to see and appreciate the wonderful progress that has been made in recent years in the Uruguayan Republic." Replying, the Minister of Foreign Affairs informed Minister Stuart that his Government would receive with extreme pleasure the visit of the commission mentioned, and would see with great satisfaction aught tending to strengthen and unfold the commercial relations between the two countries.

Mexican Merchant Marine.—Under date of Mexico, December 24, 1895, Secretary of Legation Butler reports that "the authorization granted to the Executive under decree of May 31, 1894, for the framing of a code and other contingent legislation looking to the establishment and development of a national merchant-marine service" for Mexico, has been extended to December 31, 1896.

Hungarian Red Pepper.—In compliance with a Department instruction, Consul E. P. T. Hammond, of Budapest, under date of December 5, 1895, transmits the following information relative to the growth and preparation of Hungarian red pepper:

Red pepper (paprika) is ground in stone mills, specially constructed for that purpose, together with some shakers with sieves, by means of which the assorting is obtained. Only completely dried fruit should be ground; the complete drying is artificially obtained, and care must be taken to avoid drying to excess. In order to produce a beautifully colored quality,

the fruit must be carefully cleaned, and the largest part of the seeds contained in the fruit be removed. The pepper prepared in such a manner gives the so-called rose paprika (specialty). The parings and superfluous or damaged fruit are styled ordinary commercial pepper. The manufacturing requires a thorough intimate knowledge and practice, without which much of the fruit would be wasted.

Luxemburg School for Artisans.—Vice-Commercial Agent George H. Murphy, under date of December 6, 1895, transmits an official copy of a bill then before the Luxemburg Chamber of Deputies, which has for its object the establishment of a school for artisans in Luxemburg:

The Government gives as its reason for taking the initiative in this matter the urgent necessity of educating Luxemburg mechanics in order to enable them to compete successfully with those of neighboring countries. In order to cover preliminary expenses, the Chamber of Deputies is asked to appropriate \$5,000. Scholars will be admitted when they are 12 years of age, and the course of study will occupy three years. The plan of study will be so arranged that boys can enter the academy directly from the primary schools. The course of study is to include planimetry, stereometry, the theory of projections, the fundamental principles of mechanics, chemistry, physics, natural history and bookkeeping; furthermore, free-hand, geometrical, and mechanical drawing. Most thorough attention is to be given to drawing. The teaching personnel is to consist of a director, and, at first, three professors. In addition to these the Government will appoint lecturers, instructors, and overseers. The per annum salaries are to be as follows: Director, \$700 to \$800; first-class professor, \$600 to \$660; second-class professor, \$500 to \$560; third-class professor, \$400 to \$460. The amount of the salaries of other employees is to be fixed by the Government. The bill provides that the charge for tuition shall not exceed \$8 per annum.

State Aid to German Industrial Schools.*—In compliance with Department instructions, Consul-General Charles de Kay, of Berlin, transmits the following schedule, obtained from the Prussian Minister of Education, which shows the appropriations for German industrial schools:

Appropriations made in the budget for the Prussian Government to apply to the industrial educational system for the fiscal year 1895-96.

For—	Amount.	
	<i>Marks.</i>	
Navigation, architectural, machinery schools.....	774,645	\$184,365.51
Advanced training schools.....	850,000	202,300.00
Drawing schools (Hanau and Königsberg).....	88,272	21,008.74
Additional allowances for maintenance of industrial drawing, architecture, weaving, and other special professional schools.....	618,308	147,157.30
Fund for unexpected expenses and for payment of deficits of revenue at institutions mentioned in architecture, weaving, and other schools.....	10,000	2,380.00
Education of workmen stipends.....	35,000	8,330.00
Fund for promotion of industrial instruction.....	139,100	33,105.80
Extraordinary expenses.....	146,150	34,783.70
Total.....	2,661,475	633,431.05

* See "State aid to industrial schools in France," CONSULAR REPORTS No. 181 (October, 1895), p. 183, and "State aid to British industrial schools," CONSULAR REPORTS No. 177 (June, 1895), p. 372.

Schools in Korea.—Minister J. M. B. Sill, of Seoul, transmits a royal order of September 10, 1895, providing regulations for the establishment of primary schools in Korea. The schools are to be of three kinds—Government, public, and private. Government schools will be supported by the royal general treasury, and public schools by the magistracy or prefecture. Private schools may be aided by the local or royal treasury. The order says “children shall be taught in order that the people may be educated, that a general knowledge may be diffused, and that men of ability may be raised up to fill the various professions.”

Corrections.—*Declared exports.*—In the statements showing the declared exports for the United States, quarter ended September 30, 1895, printed in CONSULAR REPORTS No. 184 (January, 1896), Hereford, on page 12, is given with the Ontario declarations; it should be under the provincial head of Quebec. As the exports declared at Hereford during the quarter amounted to only \$1,460, the provincial displacement is of little account.

Angora goat.—In CONSULAR REPORTS No. 182 (November, 1895), the following foot note, to the report upon the Revival of the Mohair Trade, is printed on p. 366: “A report upon the angora goat, with a view to its importation into the United States for breeding purposes, was printed in CONSULAR REPORTS No. 131 (July, 1883), p. 1.” This should read CONSULAR REPORTS No. 31 instead of 131.

Herbert H. D. Peirce, chargé d'affaires ad interim, United States legation, St. Petersburg; the name is erroneously printed Robert H. D. Peirce in CONSULAR REPORTS No. 184 (December, 1895), p. 414.

Consular Reports Transmitted to Other Departments.—The following reports (originals or copies) were transmitted during the month of January to other Departments for publication or for proper action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
G. H. Murphy, Luxemburg.....	Dec. 5, 1895	Hog diseases.....	Department of Agriculture.
Do.....	Jan. 3, 1896	.....do.....	Do.
F. Schneegans, Saigon.....	Nov. 2, 1895	Rice.....	Do.
Do.....	Nov. 26, 1895	.....do.....	Do.
Do.....	Nov. 30, 1895	.....do.....	Do.
E. H. Plumacher, Maracaibo...	Dec. 26, 1895	Treatment of leprosy.....	Marine Hospital Service.
James Fletcher, Genoa.....	Nov. 26, 1895	Treatment of consumption.....	Do.
Charles W. Chancellor, Havre..	Aug. 26, 1895	.....do.....	Do.

Consular Reports Reprinted Abroad.—The British Board of Trade Journal for January, 1896, reprints, in part, the report of Consul-General Donnelly, of Nuevo Laredo, on the “Interstate tariffs in Mexico,” published in CONSULAR REPORTS No. 183 (December, 1895), p. 490.

FOREIGN REPORTS AND PUBLICATIONS.

British Trade Returns.—The accounts of trade and navigation of the United Kingdom for the month of November and for the eleven months ending November 30, 1894 and 1895, make the following showing of British imports and exports :

IMPORTS.

Month and eleven months.	1894.		1895.	
Month of November.....	£35,234,149	\$171,449,369	£38,971,161	\$189,633,669
Increase			3,737,012	18,184,300
Eleven months ending November 30,				
1895.....	375,399,574	1,826,694,327	379,720,125	1,847,718,128
Increase			4,320,551	21,023,801

There was a general increase during the month in all classes in the following order: Articles of food and drink, raw materials for textile manufactures, manufactured articles, raw materials for sundry manufactures, living animals (for food), oils, chemicals, etc.

The increase and decrease for the eleven months were:

Articles.	Increase.	Decrease.
Live animals (for food)		\$1,391,931
Food and drink (free).....	\$387,888	
Food and drink (dutiable).....	3,058,027	
Tobacco (dutiable).....		1,190,669
Metals		3,568,977
Chemicals, dyes, etc.....	806,413	
Oils.....	2,245,138	
Raw materials for textile manufactures.....		3,851,011
Raw materials for other manufactures.....	1,891,714	
Manufactured articles.....	29,301,799	
Miscellaneous articles.....		7,383,561
Parcel post.....	722,971	
Total.....	38,412,950	17,386,149
Net increase.....	21,026,801	

EXPORTS.

The only decreases during the month occurred in live animals, raw materials, and machinery and millwork, the whole amounting to not over \$750,000.

British and Irish produce and manufactures.

Month and eleven months.	1894.		1895.	
Month of November.....	£18,083,087	\$87,992,301	£19,540,333	\$95,083,260
Increase.....			1,457,246	7,090,959
Eleven months ending November 30, 1895.....	198,693,654	966,843,320	206,989,636	1,007,211,566
Increase.....			8,295,982	40,368,246

The increase and decrease of British and Irish produce and manufactures during the eleven months of 1895 were:

Description.	Increase.	Decrease.
Animals (living).....	\$566,218	
Articles of food and drink.....	1,529,914	
Raw materials.....		\$6,274,371
Yarns and textile manufactures.....	22,351,875	
Metals and manufactures of.....	1,076,476	
Machinery and millwork.....	3,442,004	
Apparel and articles of personal use.....	2,037,467	
Chemicals and chemical and medicinal preparations.....		1,061,055
All other articles, either manufactured or partly manufactured.....	15,726,209	
Parcel post.....	973,511	
Total.....	47,703,674	7,335,426
Net increase.....	40,368,248	

Exports of foreign and colonial merchandise.

Month and eleven months.	1894.		1895.	
Month of November.....	£4,425,326	\$21,533,635	£4,364,070	\$21,235,564
Decrease.....			61,256	298,071
Eleven months ending November 30, 1895.....	53,138,623	258,572,539	54,943,317	267,354,180
Increase.....			1,804,694	8,781,641

We thus have for the eleven months ending November 30, 1894 and 1895:

Total trade.	1894.		1895.	
Imports.....	£375,399,574	\$1,826,694,327	£379,720,125	\$1,847,718,128
Exports.....	251,832,277	1,225,415,859	261,932,953	1,274,565,718
Excess of imports.....	123,567,297	601,278,468	117,787,172	573,152,380

The accounts of trade and navigation of the United Kingdom for the month of December and for the twelve months ending December 31, 1894 and 1895, make the following showing of imports and exports:

IMPORTS.

Month and twelve months.	1894.		1895.	
Month of December.....	£33,070,480	\$160,920,955	£36,967,505	\$179,883,879
Increase.....			3,897,025	18,962,923
Twelve months ending December 31.....				
1895.....	408,344,810	1,987,005,845	416,687,630	2,027,602,007
Increase.....			8,342,820	41,596,162

There was an increase during the month in all classes of imports in the following order: Raw materials for textile manufactures, manufactured articles, raw materials for other than textile manufactures and industries, articles of food and drink (duty free), metals, animals (for food), miscellaneous articles, oils, chemicals, dyestuffs and tanning materials, tobacco, dutiable articles of food, parcel post.

The increase and decrease for the twelve months (calendar year 1895), were as follows:

Articles.	Increase.	Decrease.
Animals living (for food).....		\$601,588
Articles of food and drink:		
Duty free	\$3,285,266	
Dutiable.....	3,951,132	
Tobacco, dutiable.....		654,345
Metals.....		1,974,048
Chemicals, dyestuffs, and tanning substances.....	1,161,295	
Oils.....	2,944,519	
Raw materials for textile manufactures.....	714,343	
Raw materials for other manufactures.....	4,980,681	
Manufactured articles.....	32,605,149	
Miscellaneous articles.....		6,639,613
Parcel post.....	823,371	
Total.....	50,465,756	9,869,594
Net increase.....	40,596,162	

EXPORTS.

British and Irish produce and manufactures.

Month and twelve months.	1894.		1895.	
Month of December.....	£17,500,585	\$85,157,846	£19,179,538	\$93,327,631
Increase.....			1,678,953	8,169,785
Twelve months ending December 31.....				
1895.....	215,824,333	1,050,201,204	226,169,174	1,100,539,200
Increase.....			10,314,841	50,337,996

The only decrease of consequence during the month took place in the exports of raw materials. The increase during the month occurred in the following articles, according to their importance: Yarns and textile manufactures, metals and their manufactures, machinery and millwork, apparel and haberdashery, etc.

The total exports of British and Irish produce and manufactures, together with the increase and decrease in 1895 as compared with 1894, were for both years :

Articles.	1894.	1895.	Increase.	Decrease.
Animals, living.....	\$3,242,371	\$3,848,031	\$605,760	
Articles of food and drink.....	52,066,068	53,775,184	1,709,116	
Raw materials.....	96,398,316	89,214,664		\$7,183,652
Manufactures :				
Yarns and textiles.....	467,259,923	493,529,170	26,269,247	
Metals and their manufactures.....	136,148,247	140,663,150	4,514,903	
Machinery and millwork.....	69,122,576	74,036,725	4,914,149	
Apparel and articles of personal use.....	42,512,792	45,350,823	2,838,031	
Chemicals and chemical and medicinal preparations.....	41,218,037	40,365,416		852,621
All other (manufactured or partly manufactured).....	136,835,818	153,245,605	16,409,787	
Total manufactured or partly manufactured articles.....	893,097,393	947,190,889	54,099,516	
Parcel post.....	5,397,056	6,510,372	1,113,316	
Total exports (British).....	1,050,201,204	1,100,539,200	50,337,996	
Foreign and colonial merchandise.....	283,140,824	291,817,733	8,676,909	
Grand total exports.....	1,333,342,028	1,392,356,933	59,014,905	
<i>Recapitulation.</i>				
Total imports for the year.....	1,987,005,845	2,027,602,007	40,596,162	
Total exports for the year.....	1,333,342,028	1,392,356,933	59,014,905	
Excess of imports.....	653,663,817	635,245,074		

A French View of United States Trade and Finance.—The *Revue du Commerce Extérieur*, of Paris, of December 14, 1895, in an article commenting upon the annual message of President Cleveland, says: The part taken by the United States in the general economy of European commerce is far greater than is supposed. The continent colonized by the Anglo-Saxon race is better than a storehouse of plenty, a cattle shed, a cotton field, and petroleum well, to which Europe comes for its corn, its flour, its meat, its woven fabrics and its lighting power. It is also a vast warehouse which absorbs the surplus of industrial production. No nation consumes more manufactured products and articles of luxury; none absorbs a greater quantity of foreign merchandise. England purchases more, but it is to nourish the half of its inhabitants, to maintain its manufactures, and to distribute through the world a portion of its acquisitions. The crisis so trying for the wool industry of all Europe was due to only one cause—the closing of the American market. The United States reduced by 150,000,000 francs its purchases of woollens, and Roubaix, Rheims, and Fourmies have suffered in consequence as much as Bradford, Chemnitz, or Verviers.

Notwithstanding the enormous extent of its territory, the geographical configuration of the United States is such, the economic union of all its

parts is so intense, the commercial activity is so developed, that crises rapidly acquire there a general character and attain extreme acuteness. The marvelous rapidity with which the American continent has been occupied by a rich and busy population, the power of consumption, the need for action for producing and utilizing the riches of the soil are such that the economic situation is far from being settled and capital is wanting. A single fact will serve to illustrate this. The 70,000,000 inhabitants of the United States have constructed an iron network infinitely more extended than that of our 380,000,000 Europeans. This network has cost 60,000,000,000 francs. Now if the Americans are great workers and know the value of time, they neither hoard nor economize after the fashion of European peasants and commoners. The emigrants who have peopled the United States arrived there with small resources. In spite of their activity they could not have accomplished their task without the cooperation of European capitalists. A portion of the interest of employed capital is spent or lost in enterprises but slightly remunerative. Thus, the average dividend of railroad stocks—and there are \$5,500,000,000 worth of these—has never reached 2 per cent.

A large portion of the manufactories, of lands even, belonging to European capitalists, the interests, dividends, farm rents, and profits return to Europe and do not aid the growth of domestic capital.

Four-fifths of the maritime commercial shipping on entrance and departure is under a foreign flag—another cause for the export of specie.

The war of secession burdened the Union with a considerable public debt—it has not fallen below \$841,000,000 and a portion of the securities is placed in Europe; for this reason it is necessary to export gold or merchandise.

Rich Americans are in the habit of traveling extensively in Europe for pleasure, and they spend there large sums of money. They leave there about \$100,000,000 annually, perhaps much more. As Europeans do not go to America to spend their pounds sterling or their louis, and as American capitalists do not place their funds outside of their continent, the balance of commerce, as a rule, is always unfavorable to the United States.

To pay for imports and to offset these different debits, the United States has but two resources—the exportation of their food commodities and raw material, and the exportation of their precious metals. The production of gold has diminished; the production of silver has increased, but it has lessened in value by half. The soil is cultivated and yields more abundant harvests, but the population increases and consumes a part of the superior values. If the corn harvest is poor, exportation declines. It has kept equal to importation, and as it is necessary that it should largely exceed it to pay the various debts of America in Europe, the country gets into debt, gold emigrates, and a crisis arises and spreads with lightning rapidity. If the price of corn or cotton falls—and it is known to what rate they have fallen—the result is the same.

All these facts are known and apparent, yet, in our opinion, the natural conclusion has never been drawn therefrom—that is, that the United States

is fatally exposed to periodical crises, caused by the export of gold, whenever the exports are not largely exceeded by the imports. Without the greater part of the public debt being secured abroad, the United States, with larger resources, finds itself in the same situation as Italy or Spain, on the ground of European capital invested in their territory and the expenditure of its capitalists on the European continent. To this uncertain situation are added the defects of a fiduciary circulation and an exceptional monetary system.

After pointing out what he believes to be these defects, the writer concludes that even with some satisfactory adjustment of the silver question, "should there be a poor harvest, or a fall in corn, gold would leave the United States as in the past under the system of greenbacks and the purchase of silver. Economic fate can not be wrestled against by means of loans."

The Commercial Exploration of China.*—The Lyons Chamber of Commerce has just received news of the mission for the exploration of China. The mission made a long stay at Tonkin, where it had the warmest and most sympathetic welcome. It visited in detail the important centers of the delta, the establishments of Along Bay (Hongay Kebao), and, after having ascended the Red River as far as Lao-Kai it entered China the 25th of November by Long-Po, in the neighborhood of Ho-Keou, one of the new Chinese markets recently opened to European commerce by the treaty of Simonoseki, and where France is going to establish a consulate. The mission arrived at Montze on December 3d.

Silk Reeling in Hangchow.—A paragraph in the North China Herald (Shanghai) of November 15, 1895, states that a syndicate of Hangchow men having received the permission of Governor Liao to build a silk filature in that city, have bought land near the custom-house upon which to erect the necessary buildings. It is proposed to build eighteen houses, each 16 by 60 feet, for the machine shops, and work has already commenced on the site. Hangchow is one of the new treaty ports recently opened to foreign commerce,† and the enterprise mentioned seems to show that the Chinese intend to compete with the Japanese in the development of their industrial resources and not let all the advantages of the new order of things go to their recent adversaries.

A Franco-Russian Bank for China.‡—The Times mentions having received information from its correspondent at St. Petersburg that the Russian Min-

* Translated from *Revue du Commerce Extérieur*, of Paris, December 14, 1895.

† See CONSULAR REPORTS No. 184 (January, 1896), p. 90, for information concerning this port and the province of which it is the capital.

‡ Translated from *Revue du Commerce Extérieur*, of Paris, January 11, 1896.

istry of Finances is occupied in organizing a Russian-French-Chinese bank, having for its chief object the development of the commercial interests of France and Russia in the far East.

Franco-Russian Commercial Relations.*—Negotiations are now continually taking place between Russian and French capitalists for the establishment of a maritime navigation society, which shall establish direct communication between Havre and St. Petersburg in order to develop commercial exchanges between these two ports.

A Japanese Journal for Germany.*—German commerce is preparing to publish, after England's example, a journal in the Japanese language designed to make known German merchandise. This journal will be edited and printed at Berlin, under the care of the Institute of Oriental Languages, and distributed gratuitously among all classes of the Japanese people. The costs will be defrayed by the price of advertisements, and there can in this way be established direct relations between buyer and seller, doing away with the onerous intervention of the houses established in Japan.

The Paris Exposition of 1900.*—The general association of commerce and of woven manufactures and textile fabrics has expressed the desire that the Chambers should ratify, without delay, the plan of the exposition for 1900, as adopted by the municipal council of Paris and by the superior committee of the exposition, considering that "it is indispensable, in order that French industry may continue, in all security, the preparation of the great work planned for 1900."

New Line of Steamers Between Vancouver and New Zealand.†—The Auckland Weekly News states that the agreement entered into between the Hon. J. G. Ward, representing the New Zealand Government, and James Huddart, representing Huddart & Co., stipulates that that firm are to maintain a four-weekly steamship service between the colony and Vancouver. The contractors are to have the option of making either Wellington or Auckland the port of call in the colony, or may make either the terminal port. In case they make one of the Australian ports the terminal port, the subsidy is to be only £20,000 per annum, but if either of the above-named ports is made the terminal port the subsidy is to be £30,000 per annum. The voyage is not to exceed twenty-two days, and £30 per day is to be paid

* Translated from *Revue du Commerce Extérieur*, of Paris, January 11, 1896.

† British Board of Trade Journal, January, 1896.

every day over and above that period the voyage is prolonged. The contract is to take effect after the expiration of eight months from the date of the agreement, and the first steamship is to leave New Zealand not later than December 1, 1896. The steamships are to be of a gross tonnage of 3,300 tons, are to have triple-expansion machinery, refrigerators capable of carrying not less than 11,000 carcasses of mutton, or an insulated cubic capacity of 20,000 feet for cold storage. They are to provide for carrying 130 passengers, and to be fitted with the electric light and all other comforts and conveniences. The contractors are to have the option of calling both at Suva and Honolulu. The usual provisions are included respecting the carriage of mails. The contract is to be in force for a period of ten years. It is also agreed that the contract is subject to a provision that on no steamship carrying mails shall colored labor in the pay of the contractors be employed, but this is to be subject to a demand to that effect being made by the Postmaster-General. The agreement is subject to ratification by Parliament.

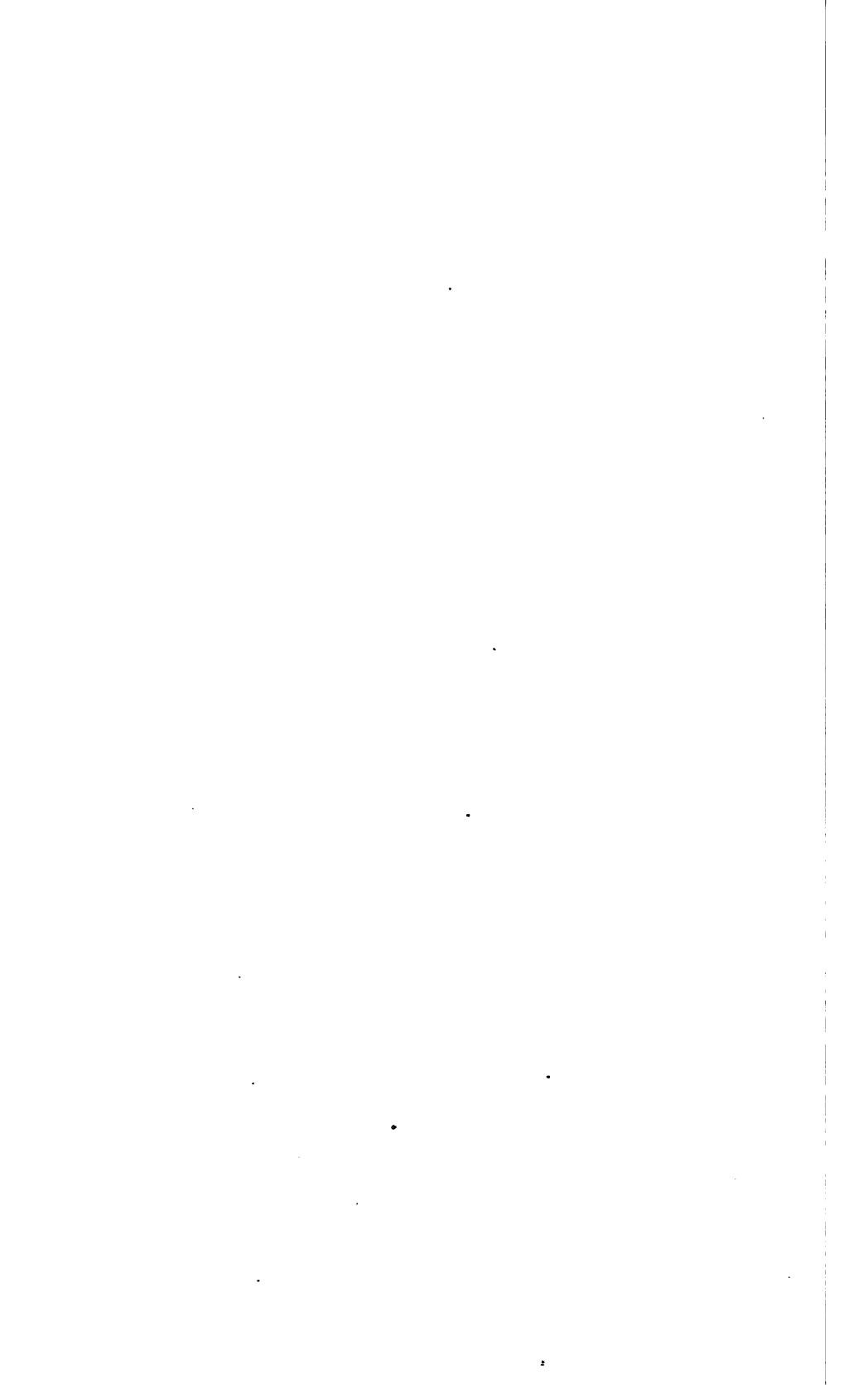
German Enterprise in China.*—The London and China Telegraph states that, according to Dalziel's Shanghai correspondence, a syndicate of German capitalists has made a highly important move by offering to purchase the arsenal dockyard at Fuchow, as well as the arsenal ironworks at Hangyang, on the Yangtze Kiang, in the province of Hupeh. Dr. Stuebel, German consul-general at Shanghai, is now at Fuchow preparing the way for the transaction. Some time ago the Chinese authorities offered to sell the works in question to a rich Chinese, to be carried on on private instead of Government account, as heretofore, but the offer met with no response. It is Herr von Brandt, formerly German minister at Peking, who, on his recent return to China, submitted the present proposal to the Chinese Government.

New Railways in Japan.*—The London and China Telegraph states that a railway project of considerable importance is reported from Kyoto. The idea is to connect Tsuruga, on the Japan Sea, with Kyoto by a line along the western shore of Lake Biwa, that route being shorter than the existing Government road, which makes a detour along the eastern shore. The whole distance is 65 miles, and the estimated capital of the company 3,200,000 yen. The projectors of the above line, among whom are found most of the names of the principal business men of Japan, have also applied for a charter to construct another line connecting the two cities of Kyoto and Osaka. This second road is to start from the Kyoto terminus of the above-mentioned Kyoto-Tsuruga line at Okazakicho, the site of the recent domestic exhibition. Thence passing through Fushimi, Yodo, Yawata, Mokigate, and Morikuchi, it will have its terminus at Noda, in Osaka. This means that it would run at some distance to the east of the existing Government railway.

* British Board of Trade Journal, January, 1896.

Opening Up of Routes in Persia.*—According to the *Journal de la Chambre de Commerce de Constantinople*, it is reported from Teheran that Mr. Felix Moral, a German subject, has obtained from the Persian Government the right of making a road from Teheran to the frontier in the direction of Bagdad, and of working a transport service on this road, as also a concession for ninety years for the construction of an electric railway from Teheran to villages situated 10 kilometers to the north of that town.

* *British Board of Trade Journal*, January, 1896.



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Full directions for binding the Consular Reports are given in No. 131, page 663.

VALUES OF FOREIGN COINS.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

These estimates "are to be taken (by customs officers) in computing the value of all foreign merchandise made out in any of said currencies, imported into the United States."

The following statements, running from January 1, 1874, to April 1, 1894, have been prepared to assist in computing the proper values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account that the ruble of Russia, for instance, has fluctuated from 77.17 cents in 1874 to 37.2 cents in April, 1894, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, and 1882 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—Countries with fixed currencies.

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange." It follows, therefore, that when foreign money orders are required, the post-office authorities, to save the Department from incurring loss in such transactions, add the rate of exchange to these valuations.

Countries.	Standard.	Monetary unit.	Value in terms of United States gold.	Coins.
Argentine Republic*	Gold and silver...	Peso	\$0.96,5	Gold—Argentine (\$4.82,4) and $\frac{1}{2}$ Argentine; silver—peso and divisions.
Austria-Hungary†	Gold	Crown .....	.20,3	Gold—20 crowns (\$4.05,2) and 10 crowns.
Belgium	Gold and silver...	Franc .....	.19,3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis .....	.54,6	Gold—5, 10, and 20 milreis; silver— $\frac{1}{2}$, 1, and 2 milreis.
British North America (except Newfoundland).	do	Dollar	1.00	
Chile‡	Gold and silver...	Peso .....	.91,2	Gold—escudo (\$1.82,4), doubloon (\$4.56,1), and condor (\$9.12,8); silver—peso and divisions.
Cuba	do	do .....	.98,6	Gold—doubloon (\$5.01,7); silver—peso.
Denmark	Gold	Crown .....	.26,8	Gold—10 and 20 crowns.
Egypt	do	Pound (100 piasters).	4.94,3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland	do	Mark .....	.19,3	Gold—10 and 20 marks (\$1.93 and \$3.85,9).
France	Gold and silver...	Franc .....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany	Gold	Mark .....	.23,8	Gold—5, 10, and 20 marks.
Great Britain	do	Pound sterling....	4.86,6 $\frac{1}{2}$	Gold—sovereign (pound sterling) and half sovereign.
Greece	Gold and silver...	Drachma .....	.19,3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti	do	Gourde .....	.96,5	Silver—gourde.
Italy	do	Lira .....	.19,3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Liberia	Gold	Dollar	1.00	
Netherlands§	Gold and silver...	Florin .....	.40,2	Gold—10 florins; silver— $\frac{1}{2}$, 1, and 2 $\frac{1}{2}$ florins.
Newfoundland	Gold	Dollar	1.01,4	Gold—\$2 (\$2.02,7 $\frac{1}{2}$).
Portugal	Gold	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Spain	Gold and silver...	Peseta .....	.19,3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway...	Gold	Crown .....	.26,8	Gold—10 and 20 crowns.
Switzerland	Gold and silver...	Franc .....	.19,3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey	Gold	Plaster .....	.04,4	Gold—25, 50, 100, 200, and 500 piasters.
Venezuela	Gold and silver...	Bolivar .....	.19,3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

* In 1874 and 1875 the gold standard prevailed in the Argentine Republic. Its currency does not appear in the statements again until 1883, when the double standard prevailed, and the peso attained a fixed value of 96.5 cents.

† On reference to the table of "fluctuating currencies," it will be seen that Austria had the silver standard up to and including the quarter ending July 1, 1892. The next quarter (October 1) inaugurated the gold standard (see note under table of "fluctuating currencies").

‡ The gold standard prevailed in Chile until January 1, 1890. The value of the peso has been the same under both standards.

§ The Netherlands florin, as will be seen in the "fluctuating" table, became fixed in value (40.2 cents) in 1880.

B.—Countries with fluctuating currencies, 1874-'90.

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875.	1878.	1880.	1883.	1884.
Austria-Hungary*	Silver.....	Florin.....	\$0.47,6	\$0.45,3	\$0.45,3	\$0.41,3	\$0.40,1	\$0.39,8
Bolivia.....	do.....	Dollar until 1880; bolivi- ano there- after.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America.....	do.....	Peso.....	.96,5	.91,8	.91,8	.83,6	.....	.....
China.....	Silver.....	Haikwan tael...	1.61	1.61	.....	.....	.....	.....
Colombia.....	do.....	Peso.....	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador.....	do.....	do.....	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†.....	Gold.....	Pound (100 piasters).	.....	.....	4.97,4	4.97,4	4.90	4.90
India.....	Silver.....	Rupee.....	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan.....	{ Gold..... Silver..... }	{ Yen.....	{ .99,7 }	.99,7	.99,7	.99,7	.....	.....
Mexico.....	do.....	Dollar.....	1.04,7½	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡.....	Gold and silver..	Florin.....	.40,5	.38,5	.38,5	.40,2	.....	.....
Peru.....	Silver.....	Sol.....	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia.....	do.....	Ruble.....	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli.....	do.....	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*	Silver.....	Florin.....	\$0.39,3	\$0.37,1	\$0.35,9	\$0.34,5	\$0.33,6	\$0.42
Bolivia.....	do.....	Dollar until 1880; bolivi- ano there- after.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America.....	do.....	Peso.....	.....	.....	.....	.69,9	.68	.85
Colombia.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador.....	do.....	do.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†.....	Gold.....	Pound (100 piasters).	4.90	4.90	4.94,3	4.94,3	4.94,3	4.93,3
India.....	Silver.....	Rupee.....	.37,8	.35,7	.34,6	.33,2	.32,3	.40,4
Japan.....	{ Gold..... Silver..... }	{ Yen.....	{ .85,8 }	.81	.78,4	.75,3	.73,4	.91,7
Mexico.....	do.....	Dollar.....	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru.....	Silver.....	Sol.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia.....	do.....	Ruble.....	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli.....	do.....	Mahbub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1892. The law of August 2 of that year (*see* CONSULAR REPORTS, No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at \$4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—Quarterly valuations of fluctuating currencies, 1891-'94.

Countries.	Monetary unit.	1893.				1894.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia.....	Silver boliviano.....	\$0. 61, 3	\$0. 61	\$0. 60, 4	\$0. 53, 1	\$0. 51, 6	\$0. 46, 5	\$0. 45, 7	\$0. 46, 4
Central America....	Silver peso.....	. 61, 3	. 61	. 60, 4	. 53, 1	. 51, 6	. 46, 5	. 45, 7	. 46, 4
	(Shanghai tael.....	. 90, 6	. 90, 1	. 89, 2	. 78, 4	. 76, 2	. 68, 6	. 67, 6	. 68, 5
China*.....	Haikwan tael.....	1. 01	1. 00, 4	. 99, 4	. 87, 4	. 84, 9	. 76, 5	. 75, 3	. 76, 3
	Tien-Tsin tael.....								. 72, 7
	Chefoo tael.....								. 71, 7
Colombia.....	Silver peso.....	. 61, 3	. 61	. 60, 4	. 53, 1	. 51, 6	. 46, 5	. 45, 7	. 46, 4
Ecuador.....	do.....	. 61, 3	. 61	. 60, 4	. 53, 1	. 51, 6	. 46, 5	. 45, 7	. 46, 4
India.....	Silver rupee.....	. 29, 2	. 29	. 28, 7	. 25, 2	. 24, 5	. 22, 1	. 21, 7	. 22
Japan†.....	Silver yen.....	. 66, 1	. 65, 8	. 65, 1	. 57, 3	. 55, 6	. 50, 1	. 49, 3	. 50
Mexico.....	Silver dollar.....	. 66, 6	. 66, 2	. 65, 6	. 57, 7	. 56	. 50, 5	. 49, 7	. 50, 4
Peru.....	Silver sol.....	. 61, 3	. 61	. 60, 4	. 53, 1				
Russia‡.....	Silver ruble.....	. 49, 1	. 48, 8	. 48, 3	. 42, 5	. 51, 6	. 46, 5	. 45, 7	. 46, 4
Tripoli.....	Silver mahbub.....	. 55, 3	. 55	. 54, 5	. 47, 9	. 41, 3	. 37, 2	. 36, 6	. 37, 1
Venezuela §.....	Silver bolivar.....					. 46, 5	. 41, 9	. 41, 3	. 41, 8

Countries.	Monetary unit.	1895.				Jan. 1, 1896.
		Jan. 1.	April 1.	July 1.	Oct. 1.	
Bolivia.....	Silver boliviano.....	\$0. 45, 5	\$0. 44, 1	\$0. 48, 6	. 48, 6	\$0. 49, 1
Central America.....	Silver peso.....	. 45, 5	. 44, 1	. 48, 6	. 48, 6	. 49, 1
	(Shanghai tael.....	. 67, 3	. 65, 2	. 71, 8	. 71, 8	. 72, 5
China*.....	Haikwan tael.....	. 74, 9	. 75, 6	. 80	. 80, 0	. 80, 8
	Tien-Tsin tael.....	. 71, 4	. 69, 2	. 76, 1	. 76, 2	. 76, 9
	Chefoo tael.....	. 70, 4	. 68, 3	. 75, 1	. 75, 2	. 75, 9
Colombia.....	Silver peso.....	. 45, 5	. 44, 1	. 48, 6	. 48, 6	. 49, 1
Ecuador.....	do.....	. 45, 5	. 44, 1	. 48, 6	. 48, 6	. 49, 1
India.....	Silver rupee.....	. 21, 6	. 21, 0	. 23, 1	. 23, 1	. 23, 3
Japan†.....	Silver yen.....	. 49, 1	. 47, 6	. 52, 4	. 52, 4	. 52, 9
Mexico.....	Silver dollar.....	. 49, 5	. 47, 9	. 52, 8	. 52, 8	. 53, 3
Persia.....	Silver kran.....			. 08, 9	. 09, 0	. 09
Peru.....	Silver sol.....	. 45, 5	. 44, 1	. 48, 6	. 48, 6	. 49, 1
Russia‡.....	Silver ruble.....	. 36, 4	. 35, 3	. 38, 9	. 38, 9	. 39, 3
Tripoli.....	Silver mahbub.....	. 41, 1	3-9, 8	. 43, 8	. 43, 8	. 44, 3

* China (silver). The Haikwan tael is the customs tael, and the Shanghai tael that used in trade. Consul-General Denny (CONSULAR REPORTS No. 43, p. 516) says: "The value of the tael varies in the different ports of China, and every port has two taels, one being the Government, or Haikwan, tael, in which all duties have to be paid, and the other the market tael, the former exceeding the latter by some 11 per cent."

† Gold is the nominal standard in Japan, but silver is practically the standard. The fixed value of the gold yen is 99.7 cents.

‡ The gold ruble is valued at 77.2 cents. Silver is the nominal standard, but paper is the actual currency, and its depreciation is measured by the gold standard.

§ The Venezuelan bolivar became fixed in value (19.3 cents) on January 1, 1892.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalent.
Almude.....	Portugal.....	4.422 gallons.
Ardeb.....	Egypt.....	7.6907 bushels.
Are.....	Metric.....	0.02471 acre.
Arrobe.....	Paraguay.....	25 pounds.
Arratel or libra.....	Portugal.....	1.011 pounds.
Arroba (dry).....	Argentine Republic.....	25.3175 pounds.
Do.....	Brazil.....	32.38 pounds.
Do.....	Cuba.....	25.3664 pounds.
Do.....	Portugal.....	32.38 pounds.
Do.....	Spain.....	25.36 pounds.
Do.....	Venezuela.....	25.4024 pounds.
Arroba (liquid).....	Cuba, Spain, and Venezuela.....	4.263 gallons.
Arshine.....	Russia.....	28 inches.
Arshine (square).....	do.....	5.44 square feet.
Artel.....	Morocco.....	1.12 pounds.
Baril.....	Argentine Republic and Mexico.....	20.0787 gallons.
Barrel.....	Malta (customs).....	11.4 gallons.
Do.....	Spain (raisins).....	100 pounds.
Berkovet.....	Russia.....	361.12 pounds.
Bongkal.....	India.....	832 grains.
Bonw.....	Sumatra.....	7,096.5 square meters.
Bu.....	Japan.....	0.1 inch.
Butt (wine).....	Spain.....	140 gallons.
Caffiso.....	Malta.....	5.4 gallons.
Candy.....	India (Bombay).....	529 pounds.
Do.....	India (Madras).....	500 pounds.
Cantar.....	Morocco.....	113 pounds.
Do.....	Syria (Damascus).....	575 pounds.
Do.....	Turkey.....	124.7036 pounds.
Cantaro (Cantar).....	Malta.....	175 pounds.
Carga.....	Mexico and Salvador.....	300 pounds.
Catty.....	China.....	1.333 $\frac{1}{3}$ (1 $\frac{1}{3}$) pounds.
Do.....	Japan.....	1.31 pounds.
Do.....	Java, Siam, Malacca.....	1.35 pounds.
Do.....	Sumatra.....	2.12 pounds.
Centaro.....	Central America.....	4.2631 gallons.
Centner.....	Bremen and Brunswick.....	117.5 pounds.
Do.....	Darmstadt.....	110.24 pounds.
Do.....	Denmark and Norway.....	110.11 pounds.
Do.....	Nuremberg.....	112.43 pounds.
Do.....	Prussia.....	113.44 pounds.
Do.....	Sweden.....	93.7 pounds.
Do.....	Vienna.....	123.5 pounds.
Do.....	Zollverein.....	110.24 pounds.
Do.....	Double or metric.....	220.46 pounds.
Chih.....	China.....	14 inches.
Coyan.....	Sarawak.....	3,098 pounds.
Do.....	Siam (Koyan).....	2,667 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Cuadra.....	Argentine Republic.....	4.2 acres.
Do.....	Paraguay.....	78.9 yards.
Do.....	Paraguay (square).....	8.077 square feet.
Do.....	Uruguay.....	Nearly 2 acres.
Cubic meter.....	Metric.....	35.3 cubic feet.
Cwt. (hundredweight).....	British.....	112 pounds.
Dessiatine.....	Russia.....	2.6997 acres.
Do.....	Spain.....	1.599 bushels.
Drachme.....	Greece.....	Half ounce.
Dun.....	Japan.....	1 inch.
Egyptian weights and measures.....	(See CONSULAR REPORTS No. 144.)	
Fanega (dry).....	Central America.....	1.5745 bushels.
Do.....	Chile.....	2.575 bushels.
Do.....	Cuba.....	1.599 bushels.
Do.....	Mexico.....	1.54728 bushels.
Do.....	Morocco.....	Strike fanega, 70 lbs., full fanega, 118 lbs.
Do.....	Uruguay (double).....	7.776 bushels.
Do.....	Uruguay (single).....	3.888 bushels.
Do.....	Venezuela.....	1.599 bushels.
Fanega (liquid).....	Spain.....	16 gallons.
Feddan.....	Egypt.....	1.03 acres.
Frail (raisins).....	Spain.....	50 pounds.
Frasco.....	Argentine Republic.....	2.5096 quarts.
Do.....	Mexico.....	2.5 quarts.
Fuder.....	Luxemburg.....	264.17 gallons.
Garnice.....	Russian Poland.....	0.88 gallon.
Gram.....	Metric.....	15.432 grains.
Hectare.....	do.....	2.471 acres.
Hectoliter:		
Dry.....	do.....	2.838 bushels.
Liquid.....	do.....	26.417 gallons.
Joch.....	Austria-Hungary.....	1.422 acres.
Ken.....	Japan.....	4 yards.
Kilogram (kilo).....	Metric.....	2.2046 pounds.
Kilometer.....	do.....	0.621376 mile.
Klafter.....	Russia.....	216 cubic feet.
Kota.....	Japan.....	5.13 bushels.
Korrec.....	Russia.....	3.5 bushels.
Last.....	Belgium and Holland.....	85.134 bushels.
Do.....	England (dry malt).....	82.52 bushels.
Do.....	Germany.....	2 metric tons (4,480 pounds).
Do.....	Prussia.....	112.29 bushels.
Do.....	Russian Poland.....	11 3/8 bushels.
Do.....	Spain (salt).....	4,760 pounds.
League (land).....	Paraguay.....	4,633 acres.
Li.....	China.....	2,115 feet.
Libra (pound).....	Castilian.....	7,100 grains (troy).
Do.....	Argentine Republic.....	1.0127 pounds.
Do.....	Central America.....	1.043 pounds.
Do.....	Chile.....	1.014 pounds.
Do.....	Cuba.....	1.0161 pounds.
Do.....	Mexico.....	1.01465 pounds.
Do.....	Peru.....	1.0143 pounds.
Do.....	Portugal.....	1.011 pounds.
Do.....	Uruguay.....	1.0143 pounds.
Do.....	Venezuela.....	1.0161 pounds.
Liter.....	Metric.....	1.0567 quarts.
Livre (pound).....	Greece.....	1.1 pounds.
Do.....	Guiana.....	1.0791 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Load.....	England (timber).....	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 super- ficial feet.
Manzana	Costa Rica.....	1½ acres.
Marc.....	Bolivia.....	0.507 pound.
Maund.....	India.....	82½ pounds.
Meter.....	Metric.....	39.37 inches.
Mil.....	Denmark.....	4.68 miles.
Do.....	Denmark (geographical).....	4.61 miles.
Morgen.....	Prussia.....	0.63 acre.
Oke.....	Egypt.....	2.7225 pounds.
Do.....	Greece.....	2.84 pounds.
Do.....	Hungary.....	3.0817 pounds.
Do.....	Turkey.....	2.85418 pounds.
Do.....	Hungary and Wallachia.....	2.5 pints.
Pic.....	Egypt.....	21¾ inches.
Picul.....	Borneo and Celebes.....	135.64 pounds.
Do.....	China, Japan, and Sumatra.....	133½ pounds.
Do.....	Java.....	135.1 pounds.
Do.....	Philippine Islands (hemp).....	139.45 pounds.
Do.....	Philippine Islands (sugar).....	140 pounds.
Pie.....	Argentine Republic.....	0.9478 foot.
Do.....	Castilian.....	0.91407 foot.
Pik.....	Turkey.....	27.9 inches.
Pood.....	Russia.....	36.112 pounds.
Pund (pound).....	Denmark and Sweden.....	1.102 pounds.
Quarter.....	Great Britain.....	8.252 bushels.
Do.....	London (coal).....	36 bushels.
Quintal.....	Argentine Republic.....	101.42 pounds.
Do.....	Brazil.....	130.06 pounds.
Do.....	Castile, Chile, Mexico, and Peru.....	101.61 pounds.
Do.....	Greece.....	123.2 pounds.
Do.....	Newfoundland (fish).....	112 pounds.
Do.....	Paraguay.....	100 pounds.
Do.....	Syria.....	125 pounds.
Do.....	Metric.....	220.46 pounds.
Rottle.....	Palestine.....	6 pounds.
Do.....	Syria.....	5¾ pounds.
Sagen.....	Russia.....	7 feet.
Salm.....	Malta.....	490 pounds.
Se.....	Japan.....	3.6 feet.
Seer.....	India.....	1 pound 13 ounces.
Shaku.....	Japan.....	10 inches.
Sho.....	do.....	1.6 quarts.
Standard (St. Petersburg).....	Lumber measure.....	165 cubic feet.
Stone.....	British.....	14 pounds.
Suerte.....	Uruguay.....	2,700 cuerdas (see cua- dra).
Tael.....	Cochin China.....	590.75 grains (troy).
Tan.....	Japan.....	0.25 acre.
To.....	do.....	2 pecks.
Ton.....	Space measure.....	40 cubic feet.
Tonde (cereals).....	Denmark.....	3.94783 bushels.
Tondeland.....	do.....	1.36 acres.
Tsubo.....	Japan.....	6 feet square.
Tsun.....	China.....	1.41 inches.
Tunna.....	Sweden.....	4.5 bushels.
Tunnland.....	do.....	1.22 acres.
Vara.....	Argentine Republic.....	34.1208 inches.
Do.....	Castile.....	0.914117 yard.
Do.....	Central America.....	38.874 inches.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Vara.....	Chile and Peru	33.367 inches.
Do.....	Cuba.....	33.384 inches.
Do.....	Curaçao	33.375 inches.
Do.....	Mexico.....	33 inches.
Do.....	Paraguay.....	34 inches.
Do.....	Venezuela.....	33.384 inches.
Vedro.....	Russia.....	2.707 gallons.
Vergees.....	Isle of Jersey.....	71.1 square rods.
Verst.....	Russia.....	0.663 mile.
Vlocka.....	Russian Poland.....	41.98 acres.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
 Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
 Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
 Gram equals 15.432 grains.
 Decagram (10 grams) equals 0.3527 ounce.
 Hectogram (100 grams) equals 3.5274 ounces.
 Kilogram (1,000 grams) equals 2.2046 pounds.
 Myriagram (10,000 grams) equals 22.046 pounds.
 Quintal (100,000 grams) equals 220.46 pounds.
 Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds.

Metric dry measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
 Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
 Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
 Liter equals 0.908 quart.
 Decaliter (10 liters) equals 9.08 quarts.
 Hectoliter (100 liters) equals 2.838 bushels.
 Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
 Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
 Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
 Liter equals 1.0567 quarts.
 Decaliter (10 liters) equals 2.6418 gallons.
 Hectoliter (100 liters) equals 26.418 gallons.
 Kiloliter (100 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
 Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
 Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
 Meter equals 39.37 inches.

Decameter (10 meters) equals 393.7 inches.

Hectometer (100 meters) equals 328 feet 1 inch.

Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).

Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.

Are (100 square meters) equals 119.6 square yards.

Hectare (10,000 square meters) equals 2.471 acres.

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THE MUSHROOM INDUSTRY IN FRANCE.*

NANTES.

CULTIVATION IN CAVES.

The cultivation of mushrooms (*champignons de couche*) is really a matter of "ancient history" in France. The people are so fond of them, they are so nutritious, and their raising is so profitable that very few Frenchmen are so poor that they can not have their beloved vegetable.

The mushroom is a mystery. Nobody knows much about it, but everybody in France knows that it can be made to grow in any quantity desired.

The variety of mushrooms is infinite. Some are so small that they can not be seen by the naked eye, and some are so large that they are virtually vegetable beefsteaks. These latter are the "cèpes."

Mushrooms can be raised in any climate and at all seasons of the year.

They are a mystery, because some varieties have distinctly defined sexual characteristics, and some others, apparently, have none at all; some will grow only out of decaying animal or vegetable matter, while others thrive only as parasites of living plants, which they eventually destroy.

When the French began to make beds for their melons, they noticed that large numbers of mushrooms would suddenly appear on the little mounds. These were as profitable as the melons, if not more so, but they could not be certain of a crop, and not until Heurtot and Legrin investigated the matter did they know whether a mushroom would appear. These two scientists, followed by Bernaudot, Brique, Gérard, Barré, Burin, and others spent long and laborious years in experimenting, and at length discovered part of the mushroom's secret, *i. e.*, the conditions under which it pleased the vegetable sphynx to grow. The result is a consumption of mushrooms in France which

* These reports were made in compliance with a Department instruction.

is simply tremendous, and the consequent increased happiness and profit of everyone.

The mushroom loves a place that is cool, damp, and dark, or, at least, it does not seek the sunshine, and light has a decided effect upon its color. If the sunlight reaches it, it will be reddish brown—that is, its hood or cap, but allowed to grow in the darkness, especially in caves, it will be white, fat, and doubly nutritious. It is for this reason that the mushroom is almost invariably cultivated in subterranean excavations throughout France.

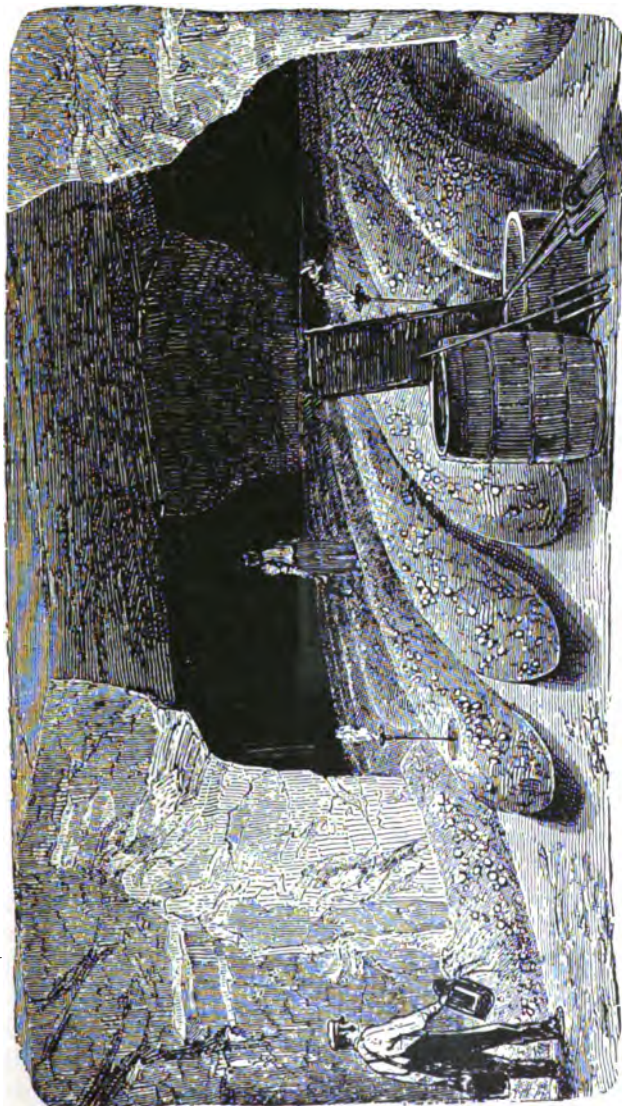
The cut herewith will better illustrate the appearance of one of these “*carrières*” than could many words. In the department of the Seine alone, there are over three thousand of these caves, and in them live about 300 people, “*champignonnistes*,” who rarely see the daylight. The descent into these caves is by way of rope ladders. The manure, which is mixed with the damp earth in making the beds for the “spawn,” is simply dumped down the mouths of the caverns. The galleries lead in all directions and are usually from about 0.8 meter to 3 meters (2.67 to 9.84 feet) high. But unless the ceiling is at least 1.5 meters (4.92 feet) high the work of spreading the manure is difficult and very fatiguing. Sometimes the ceilings are so low that the men can only work in a kneeling posture, and, as they must carry miners’ lamps in their caps, are almost stifled. There is absolutely no necessity of anything of this sort, and it is, indeed, poor economy.

These caves are generally exhausted stone quarries. They rent for from 150 to 600 francs (\$28.95 to \$115.80) per annum, according to extent, height of ceiling, ventilation, etc., but they must be provided against any sudden change of temperature. Moreover, it is highly important that the air currents move invariably in the same direction. This should be from north to south, and never more than slightly appreciable. The temperature should be about 9° C. (48° F.) to produce the best results.

MAKING THE BEDS.

The success of the mushroom grower depends entirely upon what I have said above, and upon the quality of the manure composing his beds. The choice of stables from which to take his manure is a matter of vital importance to the “*champignonniste*.” Those horses which are hard worked, but well fed, produce the best manure for beds, but their food must be rather of the dry kind—oats, hay, etc.—than otherwise. The Paris omnibus horses produce the best; their droppings, being strongly impregnated with azote acid, ammonia, and phosphorus, naturally tend to ready fermentation. The dung of animals nourished on green vegetable matter is utterly worthless for mushroom raising, being too watery; that of carriage horses is not much better. Only the droppings of heavy draft horses should be used.

It may be interesting to mushroom growers to know what the best manure costs in France. It is as follows: Heavy omnibus-horse manure, 3½ cents per day per head; small cab-horse manure, 2½ cents; merchants’ parcel delivery horse manure, 2½ to 3 cents. Economy in the quality of the manure for the beds simply means ruin to the mushroom grower.



MUSHROOM CAVES NEAR PARIS (MANY ARE UNDER THE CITY STREETS).

The making of the beds is a very important matter; it is of even greater importance, if possible, than the temperature and air currents.

A very dry and clean place near the mouth of the cave should be selected—a place where water can be readily obtained. The requisite quantity of manure having been dumped here, it should be allowed to lie for several days, after which the beds should be spread, as in the illustration. One cubic meter (35.316 cubic feet) of manure spread in this manner gives about the length of 10 meters (32.81 feet), and if it be found desirable to place the manure in little piles, one wheelbarrowful is enough for each. The smallest beds made in France are 5 meters (16.4 feet) long, 4 meters (13.12 feet) wide, and 0.8 meter (2.67 feet) high. In making these beds the manure must be thoroughly worked. Any matter foreign to the manure should be thrown aside. The beds at first are about 1 meter (3.28 feet) high, but the beating and pressing into form finally gives them a height of 0.8 meter. When this height is reached, they should be “combed” with a rake, so that every particle of foreign matter may be removed. Then they should not be disturbed in any way for at least six or seven days.

In working the manure, if it be found too dry to mix well it should be watered, using an ordinary sprinkler. It will not do to turn a hose on it.

First turning.—At the end of seven days the beds are again worked and watered carefully, raising them once more to the height of 1 meter. No part of the beds should be more moist than another. In a word, the beds are remade, “recombed,” etc., and then again allowed to rest a week.

Second turning.—At the end of seven days—that is to say, two weeks from the beginning of the work—the beds will be 0.7 meter (2.3 feet) high. The surface will be brown and fermentation very active. The manure will have lost its original color. The interior of the bed will be deep brown in color, with white spots indicating where fermentation was most active. At this stage precisely the same process must be gone through with as in the first turning, and the mass must be allowed to rest three days. It should then be soft to the touch, but leave no trace of moisture on the hand.

The beds should be about 50 centimeters (19.69 inches) at their base, with an incline of from 30 to 35 centimeters (11.81 to 13.78 inches) toward the apex. The distance between them should be about 25 centimeters (9.84 inches), not less. The beds are now patted smooth with the hand. For this work, men are paid \$1.18 per day.

THE MUSHROOM IN CELLARS.

There is very little more to be said about the cultivation of mushrooms in cellars than has already been described. Here each cone should have a base of about 0.65 meter (25.6 inches), and a height of about 0.6 meter (23.62 inches), and the incline should be 90° C. The preparation of the cones, two turnings, time, etc., are the same as in the “carrières,” or caves.

The temperature, both in caves and cellars must be watched, and it will not do to plant the “blanc,” or spawn, if the fermentation be too active.

The first heat must always be allowed to pass off. When the beds show signs of drying they should be evenly watered or sprinkled; the finer the sprinkler the better the result. The best cellars are the deepest, with high ceilings.

Forty days after the "blanc," or spawn, has been evenly planted over the beds, the mushrooms will appear, and cones or beds prepared as above directed will produce a continuous crop for three months, provided the holes left by the extracting of the mushrooms are filled again and patted over, but not otherwise.

The following illustration will give an idea of how mushrooms are cultivated in cellars in France:



MUSHROOM BEDS IN CELLARS.

THE SEED.

The seed, spawn, "semence," or "blanc" (*mycelium*), is usually supplied by market gardeners, or "*marailleurs*," in France. It is sold in the shape of a brick or a cake. These gardeners get it from their old melon beds. If kept in a dry, ventilated place it will not spoil for several years. There are three methods of procuring the spawn, viz:

First method.—Between April and September, cut a ditch along the base of a wall that has an eastern exposure. This ditch should be 0.6 meter (23.82 inches) wide, and 0.5 meter (19.69 inches) deep. The length is determined by the quantity of spawn it is desired to produce. Having first prepared five or six wheelbarrowfuls of manure as above directed, and being sure that the first heat of fermentation has passed off, mix it with one-fourth its volume of short-cut fine straw, say of the length of 2 inches. This is to give cohesion to the bricks when they are cut out. Then spread wheat chaff over the bottom of the ditch evenly to the depth of 0.16 meter (6.3 inches);

then spread the prepared manure over this to a depth of 0.16 meter; then sprinkle the bed lightly; then alternate with wheat chaff and prepared manure, sprinkling lightly each time, until the ditch is overflowing. The mass must then be shaped into conical form, as shown in the illustration, and covered with pulverized earth to the depth of 0.16 meter (6.3 inches). To prevent too rapid decomposition of the mass, in case of continued rain, cover it with old bedding from the stables. About the 1st of September examine the middle and the ends of the mass. If it is "ripe" it will present spongy filaments of a bluish color, exhaling a strong odor of mushrooms. If it be not ripe, allow three or four weeks to pass before reopening the mound. The bed should be so planted that it will ripen before frost. On opening, all parts of the mound having a dark brown color must be thrown away. This "spawn" will not reproduce, but will spoil the rest; decomposition has set in. If the bed is ripe, cut the mass into bricks. Put these in a dry, cool place at once. Do not pile one upon the other; do not let them touch.

Second method.—In the foregoing method, the spawn has formed spontaneously (so called). The second method is the one usually followed by growers, and the germs (*levain*) from former old melon beds, etc., are used. The most favorable times are spring and early autumn. As in the first method, select the side of a wall, or stone fence, but if the bed is to be made in spring choose the northern exposure; if in early autumn, the eastern exposure. The soil should be light, so that there may be no danger of too great dampness. On a bright clear day, cut a ditch about 0.2 meter (7.97 inches) from the wall, and make it 0.4 meter (15.75 inches) wide and 0.4 meter deep. Length is determined by the amount of spawn it is desired to produce. Make the bed precisely as in the first method, but leave a space of about 0.8 meter (31.5 inches) at one end of the trench. Begin here and work down the bed to the other end, thoroughly mixing the mass with the hands, then pressing it with the knees. When it is about 0.16 meter (6.3 inches) deep, place rows of the little bricks of germ along the sides, gently pressing them into the mass. They should be about 0.3 meter (11.81 inches) apart. Then repeat the process of covering with the prepared manure and sifted earth, and when it has reached a height of 0.16 meter above the first row of bricks, plant a second lot in the same manner, then a third, or fourth if necessary, to raise the mound above the soil, as in the illustrations. Then cover the bed with sifted earth to the depth of 0.16 meter (6.3 inches). The bricks must be perfectly dry. At the end of six weeks or two months, the "blanc," or spawn, should be perfectly developed. Cutting into the bed will determine this. Perhaps little mushrooms will appear about this time. Then remove the covering of earth and cut and preserve the bricks as above described. This method of securing spawn has no other advantage over the first except that it requires less time.

Third method.—Make the mixture of manure as in the first method; to it add one-third pigeon or chicken droppings. Make the bed, etc., in the

same way. At the end of two months, one may expect to be able to cut bricks of an excellent quality.

If the above instructions be followed, success is almost sure.

PLANTING THE BRICKS, OR SPAWN.

Having produced the spawn and prepared the beds, there remains little to do except to plant the bricks. Place two rows on each side of the bed, each brick being 0.2 meter (7.87 inches) distant from the other, and the second row 0.2 meter above the first, on each side of the bed. The rows should be arranged thus:



In planting, scoop out the surface of the bed according to the size of the brick and to the depth of about 0.4 meter (1.57 inches). Press the brick into this aperture and cover it with the mixture scooped out, patting it gently with the hand.

The bed must be neither too hot (from fermentation) nor too cool when the bricks are planted. A good time to plant is about the seventh day after making the bed, but sometimes even two weeks will be required to secure the proper temperature. Only experience can guide here. Mushroom growers generally decide by the amount of moisture left on the hand by touching the bed. There should be no more than a gentle warmth at the time of planting the bricks.

If in the brick there is any appearance of verdigris, it must be thrown away; it will produce a poisonous mushroom. The filaments must be bluish white—no other color.

The bricks must not be cut too thick. Very thick bricks simply waste the spawn, and produce what is called a "rock." The upper layer of mushrooms develops quite well, but the others are suffocated. Several days after planting the bricks, the filaments will push to the surface and cover the mound. The entire bed will take on a bluish white appearance—"Il y a fleuri sur panne," says the mushroom grower.

THE "GOPTAGE."

Now is the time to "gopter" the bed. This is a slang word used by the mushroom growers, but there is no other expression for the process. It means giving the bed a cover of 0.2 meter (0.79 inch) of prepared earth. In the stone quarries the refuse of the cuttings is sifted and the finer part is called "bousin." This is mixed thoroughly with light earth in the proportion of one part of earth to three of the "bousin." This mixture is sprinkled until it is sufficiently moist to retain the imprint of the hand. Then, with the aid of a smooth wooden shovel, the bed is covered to the depth of 0.2 meter with this paste, patting it lightly to make it adhere, after which it is sprinkled, not soaked. Nothing more must be done until the

day following, when the bed is again beaten with the back of the wooden shovel.

The work is now finished. Nothing more can be done except to watch the bed and water it if it shows signs of becoming too dry. Forty days after the "goptage," the first mushrooms will appear. The action of the "bousin" on the mushroom is due to the salts of niter or saltpeter, which furnish the plant an abundant supply of azote. Where the "bousin" can not be had, powdered plaster will do just as well. The "goptage" is a matter of the utmost importance; the slightest neglect means absolute failure.



GOPTAGE.

CULTIVATION ABOVE GROUND.

The cultivation of mushrooms in the open differs but little from the method pursued in caves and cellars. The preparation of the bed is precisely the same as those underground. The bed should, if possible, be made on light soil. If the soil is heavy, broken plaster should form its base, say to the depth of 0.1 meter (3.94 inches). After two weeks of fermentation, the prepared manure may be molded into form as in the illustrations. Let it be 0.66 meter (25.98 inches) at the base and 0.6 meter (23.62 inches) high. Plant the bricks as before described, and be perfectly sure that they are dry. The 1st of September is the most propitious time for above-ground planting. If the weather be rainy, the bed should be covered with straw until the time for the "goptage." After the "goptage," cover the bed again with the straw. If the straw becomes moldy, it should be renewed.

The mushrooms will appear in March and continue until May. The bed

must not become too dry but should be sprinkled morning and evening, removing the straw before each watering. Gather the mushrooms in the evening only, filling in the holes and patting the surface smooth. They should be gathered only every two days. The bed will be injured by a daily plucking.

MUSHROOMS WITHOUT MANURE.

Careful scientific investigation has proven that the very life of the mushrooms depends upon a good supply of saltpeter, and, acting on this, growers have been able to secure a growth of mushrooms at all seasons without the use of manure. The method is as follows: Take 1 meter cube of old plaster and break it up into pieces about the size of hazelnuts. Moisten the mass and put it in the cave or cellar. Form an embankment against the wall 0.66 meter (25.98 inches) wide at the base and 0.6 meter (23.62 inches) high. Smooth the surface with the hand. Place on the bricks in the position above indicated, the first row being 0.2 meter (7.87 inches) above the base, cover this with sand from a river or stream 0.04 meter (0.157 inches). The sand should be perfectly fresh and clean, but not too moist. As soon as the sand has dried perfectly, sprinkle it with a solution composed of 125 grams of saltpeter to 10 liters of water; sprinkle lightly. At the end of about forty days, the crop of mushrooms will appear.

This method is very inexpensive and the production continuous.

ANIMAL AND INSECT ENEMIES.

Rats and mice love mushrooms and are the *bêtes noires* of the growers. All sorts of devices have been tried to guard against these pests, but without success, except, perhaps, by poisoning them. The great difficulty is that they prefer the mushrooms to the poison.

Slugs or black snails are also very fond of mushrooms, but, happily, they are more fond of cabbage leaves, and if the latter be placed about the beds when traces of snails are found, the mushrooms will escape damage.

Wood lice eat not only the mushrooms but the beds themselves. There is, however, a simple remedy: Strew sliced apples about the beds and the lice will feast on these. Slaughter the lice every morning.

Coleopteres—the larvæ of two insects—which attack the mushrooms and the beds (fam. *Leptellicorues*, s. *Scarabeides*, and *Dermeste tessellatus*). They attack the bricks and break the filaments, causing great loss to the growers everywhere in France. There is absolutely no known remedy against this pest.

The fumes arising from the beds attract millions of gnats which deposit their eggs in the beds, causing the "goptage" to become a mere powder. Several methods have been devised for their destruction. One is to place in the cave a large tub of water with a lighted lamp floating on its surface. The gnats are attracted by the light, burn their wings, fall into the water and are drowned. Another method is to put a tub of soapsuds near the bed. The odor attracts the gnats and they plunge into the suds. I have

suggested a combination of these two ideas to "Champignonnistes" here, and they have tried it with success, *i. e.*, an open lamp floating in a large tub of soap water; the gnats have the benefit of both the light and the soap.

Mites are a little yellow insect belonging to the *Acarides* family. Their vitality and vivacity are enormous. The body, nevertheless, is transparent. They may be destroyed by sprinkling the beds with a solution of 4 kilograms of fresh cement in 1 hectoliter of water.

DISEASE OF THE MUSHROOM.

The *molle* or *mole* (mold) is a veritable mushroom plague. Its progress is exceedingly rapid, and the plant succumbs almost at once. The hood drops and closes around the stem, and the whole is soon covered with a cotton-like coating, emitting a sickening odor similar to that of putrid meat. If but a few mushrooms here and there on the beds show signs of mold they must be removed at once, but if there be any indication of extensive mold, there is nothing to do but to destroy the whole bed, and the sooner the better. Nobody knows why this disease attacks the mushrooms. I have heard at least twenty different explanations, some being absolutely ridiculous. I am, however, convinced that if the temperature and air currents be maintained, as above directed, the mold will seldom occur. I have been assured that mold never occurs in new caves, and that if, when first perceived the air current can be greatly increased, the disease will disappear. For this I can not vouch.

HARVESTING THE MUSHROOMS.

A mushroom is ready for market when it has attained the size of a silver 25-cent piece—that is to say, its hood. From that size up to hoods of the



MUSHROOMS WHEN RIFE (TWO STAGES OF MATURITY).

dimensions of a silver dollar are in enormous demand; but the *chefs de cuisine* do not care for larger ones. This does not apply to the "cèpes," which are frequently as large and as thick as a man's hand—the larger the better.

In the caves the mushrooms are gathered at 1 a. m., and two hours after are on the stalls in the markets.

In plucking care must be had not to tear away from the bed the very young mushrooms at the roots of the one that is ripe. Fill in the hole left and gently pat it smooth; new roots will at once replace the ones torn out.

The foregoing illustration will give an idea of the mushroom's appearance when ripe.

Mushrooms raised in the open should be gathered after sunset. The fresher the mushroom, the greater the aroma and flavor.

MUSHROOMS IN COMMERCE.

It is of the utmost importance to seize upon the proper moment for plucking if the mushroom is to be put upon the market. Do not wait until the hood has expanded like an umbrella; if this be allowed, the plant is worthless as an article of merchandise, at least in France. Moreover, it is then very indigestible. The mushroom at the left in the illustration has attained the proper degree of maturity for plucking.

PRESERVING MUSHROOMS.

The most ancient method, and the one generally employed for preserving mushrooms for household purposes, is that of drying. Mushrooms of medium size are preferred, and the drying is accomplished either by natural or artificial heat. Carefully skin and clean them, just as if they were to be used at once, then plunge them in boiling water, into which the juice of a lemon has been squeezed or vinegar poured. Stir a few seconds and remove them. This is to prevent the mushroom from turning black. Be very careful not to allow any salt or saline matter to come near the mushrooms.

After taking the mushrooms from the boiling water, allow them to drain well on a wire screen; then string them like beads and stretch the string from wall to wall in a well ventilated room. Do not permit the mushrooms to touch each other. If the season or climate be too humid, place the strings of mushrooms in a gently heated oven. When thoroughly dry, put them in bags or boxes in a room perfectly devoid of moisture. It is true that mushrooms thus treated lose part of their aroma and flavor, but they keep indefinitely, and are an article of standard commercial value in France.

Before cooking the dried mushrooms, they must be soaked in warm water or milk to restore them. The dried mushroom is extensively used as a condiment in France, and highly appreciated by the gourmets. It is simply reduced to a fine powder and mixed with one-tenth to one-twentieth truffle powder.

The process of conserving mushrooms in oil or melted butter is, of course, more costly than drying, but the aroma and flavor are retained. Proceed to prepare the mushrooms exactly as above described, and let them drain well, but, of course, do not dry them. After sufficient draining, place them one by one in wide-mouthed bottles and pour over them melted butter

or warm olive oil. Then cork and seal the bottles and put them in a cool place. There is great danger of fermentation, especially in the case of the melted butter, if the temperature of the storage room be too high.

The preservation of mushrooms as here recited, is resorted to mostly by households or dealers on a small scale. The large manufacturers invariably employ the "appert" process.

"APPERT" PROCESS.

The mushrooms are peeled and thrown in water made slightly acid with vinegar. They are then allowed to drain well, after which they are plunged in boiling butter until they are half cooked or parpoiled, then placed one by one in wide-mouthed bottles. Each bottle must contain three-fourths of its full capacity. The bottles are now well corked and the corks tightly and very securely held in place by strings. Then the bottles are placed in large caldrons of cold water, the bottoms of which have been covered with straw. The bottles are also wrapped in straw to prevent their breaking. The caldrons are then put on the fire and the water slowly brought to the boiling point, which should continue ten minutes. The caldrons are then taken from the fire and the water allowed to cool gradually, after which the bottles are removed and sealed with wax. The process is very simple, and nothing more than a little intelligent care is required to assure complete success.

A MUSHROOM SAUCE.

There is a mushroom catchup or sauce made here in France which would command a good market if introduced in the United States. Its preparation is as follows: Take 1 kilogram (2.2046 pounds) of very fresh mushrooms, peel them carefully, cut them in very thin slices, laying them in thin layers in an enameled earthen pot, sprinkling each layer with fine salt, pile layer upon layer; on top of the last layer, strew about four tablespoonfuls of the husks of green walnuts, chopped fine. Put the jar in the cellar and let it soak there five days, after which time the whole mass will be in a mushy condition. Pass this through a fine sieve. Place the liquid on a slow fire and let it remain there until reduced to one-half its original quantity. Then add an equal quantity of calf's-foot jelly, season with pepper and bay leaves to taste, and let it simmer until the consistency of ordinary catchup is attained. Bottle the result and place in a cool room. This deserves a page in a cook book, perhaps, rather than here, but it is a source of great profit to mushroom growers in France.

OUTPUT OF MUSHROOMS IN FRANCE.

The annual crop of mushrooms in France is valued at over \$2,000,000. The wholesale price to dealers is from \$22 to \$25 per 100 kilograms (220.46 pounds). In Paris alone there are sixty wholesale firms dealing exclusively in mushrooms.

REAVEL SAVAGE,

NANTES, May 14, 1895.

Consul.

THE ISARIA DEUSA AND THE WHITE GRUB.

[Inclosure in Consul Savage's report.]

The "vers blancs," or white grubs, are the larvæ of "haunetons," or cockchafers, and, in France, they are treated with a respect born of fear. The ravages of these grubs are something astounding, and extend from the smallest gardens to the largest forests. They do more damage than all other insects put together, and do it systematically and thoroughly. They kill vegetable life of all sorts and kinds with the utmost dispatch. But there is one vegetable which seeks revenge and kills them with equal alacrity—the mushroom.



A.—A healthy white grub devouring a root.

B.—A grub beginning to be attacked by *Isaria*.C.—Grub completely mummified, the roots of the *Isaria* extending in all directions from the grub's body.

The "vers blancs" are not only dangerous because of their insatiable appetite, but because of their subterranean proclivities. There is no knowing where they are until the crop dies. Nature could not have created a more perfect "destroying angel" for the plant world. All sorts of suggestions have been made for their extermination, such as following and killing the cockchafers at the mating season, saturating the suspected soil with naphthaline, etc., but all too costly either in time or materials.

Almost three years ago, the rural population of France was delighted to learn that a man had discovered a parasite which killed the white grub. This man was M. Le Moul't. For a few weeks the talk of all the provinces was, Now we can kill our underground enemies; but, as usual, it ended in talk, and they said, Oh, M. Le Moul't is only a mushroom grower, that is all. And the white grub kept on eating.

But soon M. Le Moul't announced to the world that he had discovered a method by which these mushroom parasites could be produced at the expense of little trouble and less money, and that touched the French peasants' hearts. This is what he told them:

The parasite upon which to base their hopes is a mushroom of a low order. It is the *Isaria deusa*, a plant that has been deeply studied by M. Girard, professor at La Sarbonne, Paris. Its filaments penetrate the body of the grub, which then takes on a pinkish hue. The grub dies and is mummified by the plant. Then, from the body of the grub, long roots shoot out in every direction to the distance of from 10 to 20 centimeters (3.9 to 7.9 inches). On these filaments appear little round bodies, or spores, which take great delight in searching out other white grubs. But, unfortunately, nature is very slow in this dissemination of the spores, which have very great difficulties to overcome in pushing to the open and then flying to the wind. Therefore, I have tried to help them and also to increase their number.

There used to be an idea abroad that it would be a good plan to "contaminate" a large number of white grubs with the mushroom parasite and spread them over the gardens and fields it was desired to protect, but the cost was too great. Therefore, the matter resolves itself into the simple question of practicability and expense. The *Isaria deusa* must be cultivated in great masses and without the aid of the instruments known to the laboratory, so that everyone may be able to produce all of it he needs at very little cost. I have found that this could be done.

This process consists in cultivating the *Isaria deusa* in pieces of potatoes. However, these pieces of potatoes should be allowed to be attacked first by another mold parasite, the *Penicillium glaucum*. This last is at once attacked and devoured by the *Isaria deusa*, which then grows rapidly if the temperature is above 15° C. (57.5° F.). If the temperature be below this, development is slow. At 0° there is no development.

By M. Le Moul't's process, the *Isaria deusa* can be produced at a cost of from 3 to 4 cents per kilogram (2.2046 pounds). This is the process:

Stale beer or cider (sweet), 1 liter; water, 5 liters; nitric or tartaric acid (either) 125 grams. Boil this mixture and throw into it the pieces of potatoes cut into cubes of about 8 to 10 millimeters, say of about the size requiring 1,000 to make 1 kilogram (2.2046 pounds). Let the pieces boil a few moments only, *i. e.*, until about half cooked. Take them out and let them cool, then plunge them in a cold solution as above described, and in which spores of the *Isaria deusa* have been placed sometime before. These spores can be bought almost anywhere. Then remove the potatoes and let them drain slightly, not thoroughly. Then plant them in ditches or boxes at the depth of from 1 to 2 centimeters (0.3937 to 0.7974 inch), first a layer of potatoes, then of fine earth, etc. If the temperature is above 15° C., after fifteen days one may cut the beds into the form of bricks and dry them. If the temperature be below 10° C., it will take at least a month to attain proper development. When these bricks are dry, if it be desired

to use them in the fields, they are simply crushed in the hand and cast to the winds in proportions of 50 to 100 kilograms (110.23 to 220.46 pounds) to the hectare (2.471 acres). In gardens holes should be made and the potatoes planted—say from 10 to 15 centimeters (3.973 to 5.060 inches) deep and 3 meters (9.85 feet) apart; cover with earth and pat lightly.

For the above information, I am indebted to M. Henri Coupin, and for the illustration to the Paris weekly *L'Illustration*.

REAVEL SAVAGE,

Consul.

NANTES, May 15, 1895.

BORDEAUX.

Bordeaux is one of the most important cities in France for the preserving of vegetables. During the year 1894, the value of vegetables shipped from this port to the United States amounted to \$365,630.16, and among these mushrooms figured to a considerable extent. The most common species of mushrooms grown in this part of France are known as "cèpes." These are grown wild, mostly in woods. They are greatly relished by the peasantry and natives of the region, but they would scarcely suit the taste of American consumers, although a few of them are shipped to the United States. The small mushrooms, known as Paris mushrooms or "Champignons de Paris," are also cultivated in this district to be sent to market or tinned. The mushrooms which are preserved are carefully washed, scraped, and then placed with a certain amount of water in tin cans, and the cans are boiled or steamed so that the mushrooms may be partially cooked. In some instances where it is found necessary, the mushrooms are bleached by a weak solution of citric acid or lemon juice; this in no way improves the taste or flavor of the mushroom, but merely enhances its appearance. When this vegetable is used in the household the mushrooms may be taken out of the tin and cooked in any way desirable, or if the vegetable is merely used for the purpose of decorating the dish of meat the mushrooms are sufficiently cooked to be eaten as they are. Some manufacturers preserve their mushrooms in glass jars carefully arranged so that they present an artistic appearance. I do not think, however, that the quality of the vegetable is improved by being preserved in glass.

Nearly all the small white mushrooms grown in this country are cultivated artificially and grown in caves or quarries. The southern part of France abounds with deposits of sandstone, and most buildings are constructed with it. These stones are so soft that they can be sawn with an ordinary saw, and that in fact is the way they are cut for building purposes.

To obtain mushroom beds, a quantity of wild mushrooms are dried and pulverized and the powder scattered plentifully over a layer of manure; another layer of manure is then made, upon which is scattered an equal quantity of the mushroom powder, and so on in layers until the pile attains

a height of about 3 feet. The whole is then left for eight to ten days until the two substances are thoroughly intermingled. The manure is then mixed with a quantity of sand and earth and spread out in the stone quarries. The quarries are naturally damp, cool, and dark, and in them the mushrooms grow plentifully.

The mushrooms of the cultivated description may be obtained in the markets here at any season of the year. They are sold at about 14 cents a pound. They are superior for canning purposes to the mushrooms that grow in America, principally because they possess a better appearance. They are ball shaped, the upper portion describing a circle until its roof touches the stalk, whereas the American mushrooms are flat at the top exposing a corrugated surface underneath.

J. M. WILEY,
Consul.

BORDEAUX, *September, 1895.*

MARSEILLES.

Properly speaking, no mushrooms are cultivated or preserved in this consular district; they are gathered in the woods by women and children, like wild flowers, are dried in the sun and shipped in this condition to market for sale without any conservation.

The cultivation of mushrooms in France is a special industry in the department of Seine et Oise, near the city of Paris. It is also carried on to some extent in the departments of Drome, Corrèze, Nord, Marne, and Gironde.

About a dozen letters have been sent from this consulate requesting information on the subject. Four-fifths of those addressed have made no reply, and one-fifth have written without giving any definite information. If there were an industry of this character convenient to Marseilles, we might have secured some facts by a personal visit.

The most complete book on the subject, which we have been able to find, is "*Les Champignons*," by Mr. A. Achague, published by J. B. Baillièrre et fils, 19 Rue Hautefeuille, Paris; and yet this work is botanical and scientific rather than practical. However, this report will be in the main a translation of the most practical pages of this book, and thanks are accordingly expressed to the author.

The cultivation of mushrooms is as yet crude and imperfect. Generally speaking, they are gathered like so many wild nuts, dried and offered for sale. Where any degree of system is applied, the method of cultivation is modified and adapted according to the peculiar growth and habits of the particular species.

The preparation of the manure is an important consideration. It should be kept from four to six weeks and thoroughly worked with a pitchfork, so as to separate from it all foreign substances, such as green forage, dry straw,

hair, etc. This done, the manure is spread in successive layers to a height of $1\frac{1}{2}$ and 3 feet; the pile is then thoroughly worked with the feet. The heap is then left for several days to allow the spores to develop and put out their mycelium, which begins to show itself at the surface under the form of a white moisture. The sides of the heap should then be reformed by the use of the pitchfork, taking care always to throw to the center all the dry parts from the sides, in order to obtain the decomposition. After several days' delay, the entire mass should be supple, oily, without odor, and of a bluish whiteness in the center. When the heap has reached this degree of maturity it is put into stacks, is again packed down with force, and then covered several inches with dry manure. After eight days, this outer layer is removed and then replaced. The stacks are then opened the width of the hand to a depth of 6 or 8 inches; into these openings are introduced bits of white or agglomerated myceliums. Fifteen days afterwards, the covering is turned back from the surface to see if there are any mushrooms. At first they generally appear in spots, which should be marked by sticks, and the outer layer replaced. Every three days the mushrooms may be gathered around these sticks by raising the covering. This outer layer should be replaced as soon as possible, so as to preserve the moisture of the heap and a temperature of 68° or 70° F.

A heap properly treated will last three months. In hot weather the piles should be sprinkled lightly with water every one or two days. In cold weather the mushrooms should be gathered every four, five, six, or eight days, and the thickness of the outer covering should be increased in proportion to the cold.

The bed mushrooms, as they are called, are also cultivated in cellars by the same method, with this difference, that it is not necessary to cover the heaps with the protecting sheet. One cave at Mantragne, near Paris, furnishes a daily average of 300 pounds of mushrooms.

Mushrooms should be gathered in dry weather and toward the middle of the day, but the temperature should never be too hot or the mushrooms will lose much of their aroma. If they are to be eaten at once, it is better to gather them when there are still traces of dew, but if they are to be preserved, they should be entirely dry when gathered. They should be cut or broken high up according to the edible value of the stalk. Some few varieties appear in spring, but most of them in the summer and fall.

In preserving the mushrooms, the first step is to dry them thoroughly. They are cleaned and prepared as if to be eaten at once. They are cut into pieces and plunged into boiling water for several minutes. They are then strung like beads, but in such manner that they do not touch each other. They are then suspended in the shade in the open air or in a well ventilated room. After being thoroughly dried, they are put in a paper bag and stored in a perfectly dry place, or, after the drying process, they are dropped into olive oil or melted butter, and thus preserved in sealed jars; or they may be dried in an oven, crushed into powder and preserved in this form.

It is claimed that the mushrooms preserved in melted butter retain more of the natural flavor and aroma of the vegetable. M. Guilhaut-Machien, a large firm at Lille, make a specialty of mushrooms preserved in this way. Another method employed is to put them, after being dried and cleaned, into boiling water, to which is added a small quantity of lemon juice or citric acid.

CHAS. P. PRESSLY,
Vice and Deputy Consul.

MARSEILLES, *June 7, 1895.*

PARIS.

The cultivation and preserving of mushrooms has grown to such an extent in and around Paris that the industry has become one of tremendous proportions, involving extensive skill and labor, and employing a capital of about 40,000,000 francs (\$7,720,000).

Mushrooms are cultivated in caves, specially prepared for their growth. They grow every day in the year, each day producing a new crop or growth, though cultivators of this vegetable divide them into four seasons, which they call fall, winter, spring, and summer beds. They are planted, or rather the beds are prepared, about three months before they begin to bear, and when once started they continuously bring forth large quantities each day, regulated more or less according to the air or atmosphere of the caves, which is governed by the dryness or dampness of the weather, until the soil is entirely exhausted.

Growers of this vegetable say that a mushroom bed bears daily for about three months, and at the end of that period the soil is exhausted of its substance, and new beds, which three months previously had been prepared, then begin to bear; hence it is that this vegetable is found fresh in the markets every day in the year. The seed is the spawn of the horse manure, and put with virgin soil quarried expressly to mix with it. Earth or soil that has been used for the growth of any plant, or in any way has its strength exhausted, will not mix with this spawn so as to produce the mushroom. Neither will the virgin earth bear again after it has once served to produce this vegetable.

One of the most interesting sights around Paris is the mushroom caves, which are nothing more nor less than tunnels containing at intervals of a few feet small beds of horse manure mixed with virgin soil. The caves where mushrooms are grown are especially prepared, and great care and attention is given to their keeping and perfect preservation. The temperature varies but little in summer or winter, and only climatic influences, that is to say, a very dry or very wet season, more than one of heat or cold, tends to affect the daily production of the beds. The mushrooms are gathered every morning, trimmed, washed, and sorted according to size and quality preparatory for the markets. Those that are preserved are sent to the facto-

ries for canning, where they are again washed in salt and water, selected and separated according to quality, and then slightly cooked before being placed in tins. After the tins have been closed and soldered, they are then boiled again in order that they may be more perfect in their preservation. Mushrooms are never washed in salt water unless for preserving purposes.

CLYDE SHROPSHIRE,
Vice-Consul-General.

PARIS, November 1, 1895.

CONDITION OF LABOR IN GREECE.

It is the object of this brief report to give a general idea of the condition of the laboring classes of Greece. By "laboring classes" is meant people who work for others for a fixed daily wage.

Scale of wages.

Description.	Highest.	Lowest.
Blacksmiths.....per day...	\$0. 66	\$0.08½
Bricklayers.....do.....	.55	.33
Brickmakers.....do.....	.55	.33
Butchers.....do.....	.66	.33
Carpenters.....do.....	.66	.44
Confectioners.....per month...	13.20	1.65
Coopers.....per day...	.33	.11
Farm laborers.....do.....	.44	.27½
Furniture makers.....do.....	.77	.44
Masons.....do.....	.60½	.44
Marble cutters.....do.....	.82½	.55
Mechanics.....do.....	.88	.44
Oil pressers (with food).....do.....	.33	.....
Painters.....do.....	.55	.33
Plasterers.....do.....	.66	.44
Plumbers.....do.....	.55	.08½
Printers.....do.....	.55	.44
Pressmen.....do.....	.33	.11
Soap makers.....per month...	11.00	6.60
Street-car conductors.....do.....	9.90	6.60
Street laborers.....do.....	9.90	6.60
Street-car drivers.....per day...	.33	.....
Shoemakers.....do.....	.66	.33
Servants (house):		
Cooks.....per month...	13.20	6.60
Chambermaids.....do.....	5.50	2.75
Coachmen.....do.....	11.00	8.80
Men servants.....do.....	8.80	3.30
Shipwrights.....per day...	.77	.55
Tailors.....do.....	.33	.05

The foregoing wages are paid in depreciated currency, the value of which fluctuates. In reducing the wages to American currency, the average value of the drachma (paper) has been estimated at 11 cents. It will be seen that the highest wages are those paid to mechanics, marble cutters, and furniture makers—about 88, 82½, and 77 cents, respectively, per day.

The lowest wage mentioned is that received by tailors' employees—5 cents per day. Many people in Greece work for an equally small sum, such as girls in dressmakers' shops, apprentices, etc.

*Table of food prices.**

Articles.	First quality.	Second quality.	Third quality.
Coffee.....	\$0.77	\$0.71½	\$0.66
Tea.....	3.08	1.98	1.76
Sugar.....	.22	.19½	
Butter.....	1.10	.88	.66
Lard.....	\$0.44 to .28½		
Flour (French).....	.13½		
Maslin†.....	.06½	.06	.05
Rice.....	.14½	.08½	.07½
Maccaroni.....	.07½		
Beans (dried).....	.08½	.07½	.06½
Cheese.....	.44	.22	
Olive oil.....	.19½	.16½	.13½
Olives.....	.22		
Potatoes.....	.05½ to .03½		
Tomatoes.....	.01½		
Cabbage.....	.06½		
Spinach and other greens for boiling (eaten extensively in Greece).....	.02½ to .03½		
Peas.....	.05½	.19½	
Beef.....	.24½	.26½	
Lamb.....	.33	.19½	
Mutton.....	.24½	.13½	
Goat.....	.19½		
Pork.....	.24½		
Ham :			
Cooked.....	2.20		
Uncooked.....	1.04½		
Bacon :			
Imported.....	1.04½		
Domestic.....	.44		
Codfish (salted).....	.19½		
Fresh fish.....	.44 to .15½		
Chickens.....each.....	.13½ to .33		
Turkeys.....do.....	.55 to 1.10		
Grapes.....	.04½	.02½	
Melons.....	.02½		
Fast-day food :			
Herring.....each.....	.02½		
Anchovies.....do.....	.00½		
Garlic.....do.....	.00½		
Yellow caviar.....	.22		
Halva (kind of sweet paste).....	.22		
Snails.....	.08½		
Sardines in barrels.....	.27½		
Onions.....	.02½		
Light and fuel :			
Charcoal.....	.02½		
Petroleum.....	.15½		

* Per oke of 2½ pounds.

† Maslin, wheat, and rye mixed, used entirely for bread in Greece.

All imported goods, such as pickles, canned meats and preserves, spices, biscuits, cheese, and wines, liquors, etc., are very expensive, owing to the high duties, and are only bought by the wealthier classes. The working

people of Greece rarely eat meat, many of them only once or twice a year. A bit of bread, some sour cheese, and a few olives, washed down with half a cent's worth of wine, twice a day, are the almost invariable meals of the laboring man. Let us make up the bill of fare for such a repast: Quarter loaf of bread, 1.1 cents; olives, 1.1 cents; cheese, 1.1 cents; wine, 0.5 cent; total, 3.8 cents. When a man dines at home with his family, a large dish of boiled greens (frequently gathered in the fields and costing nothing) forms the *piece de resistance*. This dish is seasoned with olive oil and lemon juice.

There are many days in the year on which, for religious motives, the Greek people practically eat nothing at all, with the exception of a few pennys' worth of the "food for fasting days," and there are four long fasts in the year, viz, fifty days before Easter, forty before Christmas, eighteen in June, and fifteen in August.

Notwithstanding the low wages, there are thirty-three holidays in the year on which no laborers work. In addition to these, each trade has its especial day, and no craftsman will follow his calling on the anniversary of the saint whose name he bears.

The cheapest lodgings in Athens cost about 10 drachmas (\$1.10) per month. Houses of three and four rooms can be rented at from 30 to 50 drachmas (\$3.30 to \$5.50) per month. Of course, such houses are in the outskirts of the town, or in the country. A small dwelling can be built for from 2,000 to 7,000 drachmas (\$220 to \$770).

Despite the low scale of wages, the condition of the laboring classes here is not one of comparative misery. This fact is due largely to the climate, the suffering consequent upon extreme cold weather being unknown here. Beggary is rare, and drunkenness is almost nonexistent. The universal drink of Greek wage workers is "resinato"—native wine, flavored with resin from the pine tree. It is wholesome and pure, and comparatively genial in its effects.

Pipe smoking is not indulged in. Tobacco, costing about 3.3 cents every two days, is consumed in the form of cigarettes.

It is but fair to add that the Greek laborer does not accomplish as much in a day as his fellow-workman in the United States, nor does he do his work so well. This statement is broadly applicable to all the departments of manual labor.

GEORGE HORTON,
Consul.

ATHENS, October 20, 1895.

COTTON MILLS OF JAPAN.

With general reference to the development of cotton manufacturing in the far East, a subject which I feel can not but interest our spinners in the United States, I have the honor to submit, in tabulated form, the inclosed statistics which I have obtained through the courtesy of the Japanese consu-

late here, relative to the production of cotton fabrics in Japan in 1892 and 1893.

Production of cotton fabrics in Japan during the year 1892.

Name of prefecture.	Cotton piece goods.		Japanese cotton "obi," or sash.	
	Quantity.	Value.	Quantity.	Value.
	<i>Pieces</i>	<i>Yen.*</i>	<i>Pieces.</i>	<i>Yen.*</i>
Tokyo.....	334,024	387,872	31,400	4,210
Kanagawa.....	199,551	86,653		
Saitama.....	2,890,788	1,433,290	23,203	10,612
Chiba.....	234,198	135,481	1,173	594
Ibaraki.....	388,598	198,224	2,481	885
Tochigi.....	1,202,808	617,115	110,544	46,703
Gumma.....	173,357	121,232	10,856	4,315
Nagano.....	51,880	25,873	3,472	970
Yamanashi.....	84,038	52,899	1,158	753
Shizuoka.....	300,259	185,329	1,875	1,308
Aichi.....	10,425,168	3,076,113		
Miye.....	455,857	269,188		
Gifu.....	699,528	301,800		
Shiga.....	253,615	119,241	215	144
Fukui.....	169,926	91,839		
Ishikawa.....	299,969	174,230	1,972	
Toyama.....	190,820	24,902		
Niigata.....	941,413	416,867	2,100	975
Fukushima.....	208,754	99,206		
Miyagi.....	41,031	26,781	140	85
Yamagata.....	200,046	89,958	1,900	1,043
Akita.....	100,465	135,248	68	63
Iwate.....	19,311	12,765		
Aomori.....	2,634	1,972	528	475
Kyoto.....	628,377	837,994	662,825	475,747
Osaka.....	4,720,942	1,523,754	60	60
Nara.....	2,999,397	1,006,975		
Wakayama.....	1,915,535	2,133,851		
Hiogo.....	1,232,277	589,513	4,358	2,469
Okayama.....	636,816	238,904	636,880	145,029
Hiroshima.....	591,034	326,110	1,121	520
Yamaguchi.....	1,293,800	627,840	5,946	3,046
Shimane.....	369,293	116,966	705	290
Tottori.....	332,344	194,023	2,907	1,508
Tokushima.....	844,410	386,847	366	108
Kagawa.....	123,673	53,984		
Yehime.....	3,033,825	882,813	30	13
Kochi.....	72,961	49,536		
Nagasaki.....	87,581	50,630	70	39
Saga.....	86,635	68,561	78	61
Fukuoka.....	552,407	557,208	7,184	4,090
Kumamoto.....	445,515	375,898	1,846	1,192
Oita.....	139,134	91,481	1,655	739
Miqazaki.....	71,523	56,405	230	236
Kagoshima.....	203,079	150,210	4,555	1,286
Hokkaido.....	532	354		
Total.....	40,219,136	18,402,874	1,526,220	710,535
Total, 1891.....	36,175,902	16,344,908	1,724,263	581,762
Total, 1890.....	30,044,876	13,039,442	2,189,742	465,161
Total, 1889.....	32,163,425	19,757,555	473,441	187,722
Total, 1888.....	28,687,715	12,227,120	688,935	118,771
Total, 1887.....	29,619,381	11,521,891	1,458,300	503,995

* Silver.

Production of cotton yarn in Japan in the year 1893.

Prefecture and name of mill or company.	Capital paid up.	Number of spindles.	Number of days of operation in the year.	Number of hours of operation in a day.	Quantity of cotton yarn produced.	Quantity of cotton wasted in the mill.	Waste cotton yarn.	Horsepower.		Quantity of coal consumed.	Number of hands employed.		Average wage of workman per day.		Price of yarn.
								Steam.	Water.		Male.	Female.	Male.	Female.	
<i>Tokyo.</i>	<i>Yen.</i>				<i>Kwan.</i>	<i>Kwan.</i>	<i>Kwan.</i>			<i>Pounds</i>			<i>Sen.</i>	<i>Sen.</i>	<i>Yen.</i>
Tokyo.....	380,000	9,304	324	22	337,245	402,265	37,779	300	.....	4,506,090	160	560	20	8.2	81.80
Kanagawachi.....	1,250,000	30,558	320	22	815,486	977,504	143,663	750	.....	14,680,699	402	1,916	26.7	12.9	86.69
<i>Kyoto.</i>															
Fuji.....	28,000	1,136	310	23	51,600	58,000	5,170	.....	35	.....	16	40	18.5	9.7	77.80
Yamata.....	146,000	3,338	390	23	70,811	94,428	10,007	22	.....	2,050,068	67	277	13.7	7.3	86.66
Yamashiro.....	40,000	2,152	116	24	11,530	14,499	2,236	.....	20	.....	52	137	14	9	82.00
<i>Osaka.</i>															
Dojima.....	250,000	10,008	328	24	218,978	262,426	44,530	300	.....	782,496	179	526	12	11	88.85
Hirano.....	300,000	11,520	320	21	445,000	500,000	4,500	300	.....	5,480,000	141	463	14	10	79.20
Osaka.....	1,200,000	37,513	327	22	908,617	1,107,872	138,690	860	.....	2,318,345	589	1,392	18.8	12	72.86
Settsu.....	750,000	19,960	331	22	829,308	272,680	131,245	550	.....	8,320,070	437	1,453	20.5	21.1	82.99
Naniwa.....	650,000	33,232	166	22	880,908	960,510	12,123	700	.....	14,475,600	388	1,203	19.5	11	79.20
Kanakin.....	480,000	13,552	338	22	275,745	326,531	36,430	330	.....	6,002,100	209	708	26	16	97.50
Tenma.....	450,000	16,540	325	24	442,386	541,774	79,311	430	.....	5,396,625	311	768	20.1	22.8	28.72
Kawabara.....	25,000	2,000	306	22	32,488	39,193	4,380	.....	25	.....	21	70	18.7	8.8	72.00
Senshin.....	500,000	19,264	309	22	485,065	331,461	55,752	500	.....	3,451,879	260	855	19	12.5	83.14
<i>Hirogo.</i>															
Anaga Saki.....	352,800	11,520	331	22	241,272	293,673	35,355	60	.....	5,822,600	322	762	13.2	8.4	.....
Himeji.....	100,000	4,752	322	24	162,069	186,543	19,427	20	10	220,340	140	265	20	20.5	81.08
<i>Nagasaki.</i>															
Taguchi.....	5,000	4,144	312	12	3,495	3,504	180	40	.....	172,600	96	150	15	9	78.00
<i>Tokachi.</i>															
Shimonike.....	159,000	4,900	309	22	116,645	135,934	8,395	25	63	1,063,160	65	167	14	10	82.37
<i>Nara.</i>															
Mayekawa.....	50,000	2,000	310	23	58,400	65,601	6,099	60	36	1,091,500	25	90	18.5	8.5	80.60

† Count 12.

* Count 21.

Production of cotton yarn in Japan in the year 1893—Continued.

Prefecture and name of mill or company.	Capital paid up.	Number of days of operation in the year.	Number of hours of operation in a day.	Quantity of cotton yarn produced.	Quantity of cotton wasted in the mill.	Waste cotton yarn.	Horsepower.		Quantity of coal consumed.	Number of hands employed.		Average wage of workman per day.		Price of yarn.
							Steam.	Water.		Male.	Female.	Male.	Female.	
<i>Miyé.</i>	<i>Yen.</i>			<i>Kwan.</i>	<i>Kwan.</i>	<i>Kwan.</i>			<i>Pounds.</i>			<i>Sen.</i>	<i>Sen.</i>	<i>Yen.</i>
Miyé.....	609,000	30,672	23	920,759	1,041,137	92,852	598	45	15,133,910	629	1,797	15.4	10.3	84.00
<i>Aichi.</i>														
Nagoya.....	375,000	6,304	23	196,194	230,089	27,620	180	.....	6,281,433	120	218	15.9	9.6	82.00
Owari.....	300,000	15,328	23	530,910	616,672	70,500	350	.....	6,067,000	231	912	19.2	10.3	82.00
Aichi.....	40,000	2,000	24	38,617	38,047	3,931	229	16	583,626	25	96	18	8.4	81.00
<i>Shizuoka.</i>														
Shimada.....	75,000	3,136	22	44,212	50,700	2,657	.....	70	.....	35	110	22	9	81.75
Totomi.....	15,000	2,000	35	3,000	3,595	230	.....	30	.....	20	30	13	7	76.00
<i>Yamanashi.</i>														
Menshi.....	50,000	2,064	20	54,654	63,979	1,258	.....	40	.....	27	102	18	13	83.50
Wanabe.....	20,000	2,000	24	38,400	44,800	384	.....	30	.....	10	50	25	15	85.00
<i>Miyagi.</i>														
Miyagi.....	22,100	2,000	11	20,800	23,420	2,000	.....	40	.....	15	41	19	7.1	85.00
<i>Okayama.</i>														
Okayama.....	264,000	12,888	23	466,966	590,979	30,610	330	.....	5,043,499	105	387	18.6	7.9	82.12
Shimonoseki.....	50,000	1,608	24	77,338	91,161	5,929	60	.....	1,750,130	47	133	15.8	7.7	81.67
Kurashiki.....	225,000	9,972	24	240,076	292,704	12,102	250	.....	3,568,400	96	649	16.9	6.5	81.12
Tamashima.....	245,200	13,092	24	470,630	509,498	41,847	309	.....	7,410,480	138	421	16.1	6.4	82.47
<i>Hiroshima.</i>														
Hiroshima.....	200,000	6,000	21	102,065	118,796	16,731	55	40	2,379,814	109	215	15	8	80.00
Fukuyama.....	120,000	4,608	24	82,894	113,064	10,006	136	.....	2,207,335	97	233	15.5	7.1	82.50
<i>Wakayama.</i>														
Wakayama.....	220,000	5,868	22	210,549	231,592	20,110	140	.....	2,069,700	122	215	15.3	9.1	83.31

Kategorie.	37,400	2,000	308	23	54,871	67,048	10,345	671	53	1,973,073	38	139	13.9	6.4	81.83
Ankigina.....															
Yakime.....	107,230	4,128	313	20	79,825	88,734	7,375		75		58	250	12	5.5	86.06
Futukaka.....															
Kurume.....	175,275	5,160	322	22	193,377	213,862	17,096	2,110	150	3,444,710	130	348	15	9.1	82.22
Mitke.....	300,000	10,360	316	11	423,916	479,360	59,630	3,224	230	4,833,200	137	573	17.1	7.5	80.65
Kagoshima.....															
Kagoshima.....	30,000	3,030	281	11	15,637	27,475	1,476	191	35	638,834	35	53	16	5.8	76.30
Total*.....	10,596,005	381,781	1297	122	10,666,744	11,531,397	1,178,059	998,466	8,110	149,228,176	6,164	19,284	177.4	19.4	121.85
Total, 1892.....	9,103,227	385,314	1291	122	9,177,228	12,240,793	906,117	304,811	8,604	131,853,662	6,354	18,898	177.4	18.9	125.58
Total, 1891.....	8,715,510	353,080	1274	120	7,689,938	8,995,203	823,003	239,371	8,247	168,482,919	5,021	14,216	177.7	19	122.63
Total, 1890.....	777,895	277,895	1274	121	5,132,388	5,962,484	598,651	88,565		74,492,132	4,089	20,330	177	18.2	122.67
Total, 1889.....	215,190	215,190	1302	123	3,359,042	3,859,464	311,971	51,971		50,592,366	2,539	5,391	177.1	18.1	122.69
Total, 1888.....	113,856	113,856	1314	122	1,593,103	1,807,076	140,986	16,025		27,263,666	1,204	2,199			1107.63

• Total number of mills in 1893, 40; 1892, 39; 1891, 36; 1890, 30; 1889, 28; 1888, 20.

† Average.

NOTE.—1 kwan=8.87 pounds avoirdupois, or 10.066 pounds troy. The "capital paid up" and the "number of spindles" in the above table shows, respectively, the amount on the 31st of December, 1893. The "price of cotton yarn" in the table shows the price of 48 kwan of yarn, the counts or numbers being 16 (or No. 10 of Japanese system).

E. SPENCER PRATT,
Consul-General.

SINGAPORE, September 6, 1895.

SUMATRA TOBACCO.

Reflecting upon the great increase that has taken place in the production of Sumatra tobacco, the high price it commands on account of its superiority, especially for wrapping purposes, and the significant fact that so large a proportion of it is annually purchased in Amsterdam exclusively for the American market, I became convinced that substantial benefits would accrue to our own tobacco industry from the reproduction of this particular variety of the plant in the United States. Believing its successful cultivation possible, at least in Lower California and along our southern seaboard, I determined, as far as I could, to undertake the experiment of its introduction there.

With the above object in view, I accordingly addressed myself to the acting consul-general of the Netherlands here, Mr. J. J. M. Fleury, with the request that he would furnish me with information as to the growth and development of tobacco culture in Sumatra and assist me in the matter of procuring a supply of the best quality of seed.

The latter, he said, he could not promise to do, on account of the objection of the planters on the island to allowing any of their seed to be exported. On the general subject of Sumatran tobacco planting, however, he was kind enough to furnish me with the following very interesting particulars:

It was in the year 1862 that an Arab drew the attention of a commercial house in Batavia to the district of Deli, on the east coast of Sumatra, a country where pepper and tobacco were being produced, and where a good market could be found for European goods. This led to a commercial expedition to Deli in March, 1863, which expedition was joined by Mr. J. Nienhuys, a tobacco planter in Java, with the special object of inspecting the soil in Deli and seeing whether it was suitable for tobacco cultivation. Received with open arms by the then Sultan of Deli, Mahmood Per-Kasa Alam, the commercial agents entered into commercial and agricultural agreements, but these agreements for various reasons came to nothing, and the only result of the expedition was that Mr. Nienhuys obtained a firm footing in Deli.

Being provided with the necessary funds by a firm in Rotterdam, Mr. Nienhuys sent his first 50 bales to Europe in 1865, and, in 1866, 189 bales, and this tobacco attracted the attention of experts to such an extent that Mr. P. W. Janssen, on the advice of a tobacco merchant (Mr. A. Clemen), and having full confidence in the report of Mr. Nienhuys, who had gone to Amsterdam, decided to assist him financially, especially as Mr. Nienhuys had taken with him very favorable offers of concessions from the Sultan of Deli. The first results of this new enterprise were very favorable; the first shipment of the 1868 crop was sold in that year for 2.25 florins per half kilogram (90½ cents per 1.1 pounds), and this was an inducement to extend the undertaking.

Assistance was given Mr. P. W. Janssen by the Netherlands Trading Society of Amsterdam, and in May, 1869, Mr. Clemen went to Deli to secure land for a company that was to be formed and otherwise assist Mr. Nienhuys. Mr. Clemen died five months later, but this did not interfere with the starting of the company, the articles of association of which were signed on October 28, 1869, the company to start from November 1, 1869, with a capital of 300,000 guilders.

This is how the Deli Maatschappij was started, the pioneer tobacco planters in Deli. I attach a statement showing the number of estates it possesses, the number of bales of tobacco it has produced from 1870 to 1893, the average prices realized, the total value of such tobacco, the dividend paid on the shares, the original capital and gradual increases, and the total dividends. It will be seen that 52,759 bales were produced in 1893, and as the total crop of that year was something like 160,000 bales, the Deli Maatschappij produced about a third of the Sumatra tobacco.

The crop of tobacco from the east coast of Sumatra which, since 1869, had been gradually increasing, reached a total of over 236,000 bales of 174 pounds each in 1890. This was evidently too large a crop for the consumption, for heavy loss was sustained by planters, many of whom, working with slender means, had to close their estates, and, as will be seen from the accompanying statement, even the Deli Maatschappij suffered a loss that year. In 1891, the crop was about 10,000 bales less, and prices improved, but although the big companies made comparatively small profits, many private planters had to close. This reduced the crop of 1892 to about 150,000 bales, which brought good prices and evidently stimulated the production, for the crop of 1893 rose to 160,000 bales, and the 1894 crop, which is now being disposed of, is estimated at about 200,000 bales or more.

The opinion is that there is at present no demand for more than 200,000 bales a year at the most, and when the production surpasses this quantity, another crisis will be experienced.

As far as I have been able to gather from the means at my disposal, there are at present on the east coast of Sumatra twenty-six public companies and about twenty-five private planters engaged in tobacco cultivation.

As to the mode of cultivation, the planting is done by Chinese coolies, imported chiefly direct from China. When the number from China proves insufficient, Chinese are engaged in the Straits Settlements on contract.

Each Chinese coolie gets a field of three-fourths of a bouw.* He has to plant tobacco on that field, and he gets payment for his labor when the tobacco is ripe and delivered by him to his master. When he delivers his tobacco, the coolie is paid per 1,000 plants, according to quality, from \$1 to \$8. During the planting season, however, he receives an advance of \$5 per month.

* 1 bouw = $1\frac{3}{4}$ acres.

When the tobacco is in the fermenting sheds, the Chinese work in the sheds on contract until the planting season commences again. They are chiefly employed at sorting tobacco, and receive therefor three-fourths of a cent for each bundle of thirty-five to forty leaves. The payment of coolies on the estates is made on the 1st and 16th of the month, when they are paid what they have earned, or given advances.

Besides Chinese, other coolies are employed, namely :

Japanese, who, in the beginning, get \$6 a month and the women \$3 per month. They are used for roadmaking, shed building, and jungle cutting or clearing work. These wages must be considered as a minimum ; as soon as they learn their work, they enter into contracts for piecework, and a good workman can earn as much as \$12 per month.

Klings are also found in Deli, but they are comparatively few, as the British Government does not allow the emigration of laborers to Netherlands India. Those Klings who manage to get over, work as cattle keepers and roadmakers, and earn from \$6 to \$9 per month.

For jungle cutting, \$10 to \$30 per 1,000 square fathoms are paid, according to the nature of the wood that has to be felled. This is done in gangs, and each man's share comes to between \$2 and \$5.

For cutting long grass (lalang), a man receives \$5 as maximum for 10,000 square fathoms.

Plowing is paid for by the month. With a plow and two pairs of buffaloes, one-third of a field, or one-fourth of a bouw, can be plowed per day. A Japanese or Kling gets for this \$8 per month, and for looking after the buffaloes, \$2. A boy for driving the buffaloes and keeping off the mosquitoes receives \$3 to \$4.

For full particulars regarding tobacco cultivation in Deli, I would refer to the work, *De Tabakscultuur in Deli*, published by J. H. de Bussy Rokin, 60 Amsterdam.

Having made up my mind to obtain a supply of the seed of the plant in question, if any was at all obtainable, and recognizing from the statement made me by the acting Dutch consul-general that this would be extremely difficult, if not impossible, through official channels, I sought to do so through private ones, and, thanks to the kind assistance of a leading merchant extensively engaged in trade with Sumatra, have at length succeeded in procuring a lot of what he informs me is from the best plants the island produces. This lot of seed I shall avail myself of the first opportunity to forward you, with the request that one-fifth of it be handed over to Senator Samuel Pasco, of Florida, who has written me for some, and that the remainder be transmitted to the Honorable the Secretary of Agriculture.

Statistics relating to tobacco estates owned in Sumatra by the Deli Maatschappij, 1870 to 1893, inclusive.

Crop year.	Number of estates.	Number of bales of about 158* half kilograms.	Average price per half kilo-gram in guilder cents,† about—	Approximate total value.	Dividend on shares of 1,000 florins.	Working capital.	Total dividend.
				<i>Florins.</i>	<i>Florins.</i>	<i>Florins.</i>	<i>Florins.</i>
1870.....	1	1,315	130	270,000	200	300,000	60,000
1871.....	1	1,788	125	350,000	330	315,000	103,950
1872.....	3	3,015	145	650,000	.....	351,000	210,600
1873.....	5	3,575	182	1,050,000	.....	500,000	350,000
1874.....	7	4,499	152	1,000,000	800	500,000	400,000
1875.....	7	5,191	175	1,350,000	910	500,000	455,000
1876.....	8	7,950	159	1,820,000	1,130	500,000	565,000
1877.....	9	9,519	132	1,850,000	225	800,000	180,000
1878.....	10	11,971	136	2,450,000	379	2,000,000	758,000
1879.....	11	13,749	126	2,700,000	332	2,000,000	664,000
1880.....	11	16,339	121	3,150,000	373	2,000,000	746,000
1881.....	11	21,187	135	4,520,000	650	2,000,000	1,300,000
1882.....	10	23,373	156	5,700,000	1,010	2,000,000	2,020,000
1883.....	11	21,683	144	4,900,000	777	2,000,000	1,554,000
1884.....	11	26,281	157	6,400,000	1,075	2,000,000	2,150,000
1885.....	12	24,798	162	6,300,000	1,085	2,000,000	2,170,000
1886.....	12	24,013	173	6,500,000	1,098	2,000,000	2,196,000
1887.....	12	20,509	133	4,200,000	452	2,000,000	904,000
1888.....	15	27,583	136	5,900,000	352	4,000,000	1,408,000
1889.....	16	31,427	129	9,260,000	793	4,000,000	3,172,000
1890.....	21	40,952	83	6,460,000	.....	4,000,000	1,359,000
1891.....	21	49,314	105	8,180,000	288	4,000,000	1,152,000
1892.....	22	43,701	131	8,900,000	514	4,000,000	2,056,000
1893.....	21	52,759	156	12,800,000	1,000	4,000,000	4,000,000
Total.....	.....	495,491	138	106,660,000	1628	.....	28,215,550

*158 half kilograms=174.16 pounds.

†Guilder, or florin=40.2 cents American; the guilder cent, therefore=4.02 mills.

‡ Loss.

§ Probably.

| Average.

E. SPENCER PRATT,
Consul-General.

SINGAPORE, September 5, 1895.

COFFEE IN THE STRAITS SETTLEMENTS.

I have the honor to report that the receipts of clean coffee in Singapore for each month of the second quarter of the present year were as follows: April, 97,466 pounds; May, 84,533 pounds; June, 123,866 pounds; total, 305,865 pounds.

The prices for the above quarter opened at \$44.60 (Mexican), ranged down to \$42.75 for best qualities, and closed at \$43 to \$43.50 per picul of 133½ pounds. For other qualities, \$37 to \$41.50 have been paid.

In view of the increase in the production of coffee in the Straits Settlements, and the amount of the article that is being transported hence to the United States, it has occurred to me that the above information might prove of interest to those engaged in the trade.

E. SPENCER PRATT,
Consul-General.

SINGAPORE, *August 24, 1895.*

AMERICAN-TUNISIAN TRADE.

I take the liberty of submitting to the Department the following facts relative to the trade between the United States and Tunis, and the means of increasing the same.

Tunisian commerce was limited, during many centuries, to the Mediterranean states; later, France took the lead and became the principal consumer of the general produce of Tunis. It was toward its principal seaport, Marseilles, that nearly the whole production of the Regency was incessantly directed. Spain, Italy, and the Levantine provinces came in the general movement, but for a small figure and in an irregular manner.

This state of things lasted without much variation, until steam navigation made its appearance, but although foreign consumption increased at that period, French commerce held its ground and still monopolizes the Tunisian markets.

England alone found a lasting and excellent field of action in Tunis for its cotton manufactures and ironwares. Belgium has, only of late, succeeded in superseding it in this last item; but the English cotton manufacturers are still commanding the market, their annual sales amounting to over \$1,000,000.

The United States merchants were at too great a distance from Tunis to undertake a direct trade with our markets. It was only through other countries that their goods would reach us, and the outlay and expenses of the operations were so heavy that we soon felt discouraged on both sides and gave up the idea of working under such conditions. My commercial house tried repeatedly, many years ago, to bring American cotton manufactures into our markets in competition with the English goods. We were under the belief that American manufacturers, possessing cotton in their own country, could naturally be able to deliver their manufactures under much better conditions. We sent large sample collections of all the different qualities of T cloths, madapolams, cambrics, shirtings, cotton handkerchiefs, etc., to America with special and most minute directions. The result was very good as regards the workmanship and the technical part of the operations, but we could not succeed in getting the trifling difference in price necessary to compete with the British goods. We were, therefore, compelled to postpone our attempt to a more favorable occasion.

Since that period, petroleum has made its appearance on this market ; it is a powerful element of business between Tunis and the United States ; its use has become general, down to the far south regions of the Regency, and is increasing every day, notwithstanding the competition of the Russian oil. The American quality is considered the best, and its sale is very active at this time, amounting to nearly 50,000 boxes a year.

Besides these two articles—cotton manufactures and petroleum—we could import many others which, up to this time, are kept away from our markets by the difficulties I indicated at the beginning of this report, viz, tobacco, rum, alcohol, wheat flour, maize flour, cotton, cotton-seed oil, machinery, etc. All these goods, and many others of less importance, reach this place through England, France, and Gibraltar.

The articles we can ship to the United States are the following: Olive oil, which is the most important Tunisian product, of which the first quality is used for eating and cooking purposes and the second quality for making first-rate soap, lubricating machinery, or for other industrial uses; soap of different qualities, hides, wool, sheep, goat and kid skins, dates of excellent qualities, oranges, mandarins, lemons and citrons, beeswax, honey, woolen carpets (native make), woolen tissues, embroidered skins and velvets, etc. This list of the principal goods imported and exported from this place, shows the absolute want of a direct and regular service of steamers between our ports. The development of the steam navigation which now brings our countries within a few days' distance from each other, and the cheapness of the actual freights, with the wonderful progress of American industries, will, no doubt, contribute to realize my old project of opening the north African markets to American activity and enterprise. Although it is no more a question of personal interest with me, as it was formerly, I shall hail its realization with the heartiest satisfaction, as it will prove very advantageous, undoubtedly, to the interests of the great country I have the honor of representing here.

There is already a small line of steamers belonging to an "Italo-American Company" running for a few months between New York and Palermo, and calling at Gibraltar and Algiers. The agents at New York are Messrs. Villari & Michell. I wrote them, pointing out the advantage of having their steamers call at Tunis on their way to Palermo. No answer was received, and I inferred from their silence that their ships were perhaps too small for the undertaking. Anyhow, we should require a monthly service from New York or Philadelphia, with the indispensable conditions of steadiness and regularity, without which traders can not act with courage or confidence. I have no doubt that, with moderate freights, this line would pay well and soon become bimonthly and then weekly.

ALFRED CHAPELIÉ,
Vice-Consul.

TUNIS, *October 30, 1895.*

BELGIAN DAMASCUS GUN BARRELS.

The value of the declared exports from the consular district of Liege for the quarter ending September 30, 1895, was \$1,037,048.97; the value of firearms embraced in this amount, and which represent the principal export from the city of Liege exported to the United States, was \$295,285.71.

An important feature of the manufacture of gun barrels in this consular district is the production of the entirely handmade damascus barrel for sporting guns in the valley of the Vesdre, province of Liege. This industry dates back for many years, and extends from Nessonvaux to Chaudfontaine, where most of the workmen are gun-barrel makers, the trade descending from father to son—in fact, it may be said that they are born to the work.

Gun factories producing damascus barrels of superior quality, use metals which are the result of a combination of the best primary substances, which are welded and forged by the "martelage à froid" process. The steel is imported from Westphalia, Germany; the iron is manufactured at Couvin, in Belgium; the coal for the numerous forges is obtained from the mines of the highlands of the Herve, situated in the vicinity of this industry, and furnish coal especially fitted for this work. The factories receive their power from the River Vesdre. The manufacture of damascus barrels has increased extensively in recent years, owing to the expertness of the artisans and the advantageous geographical situation of the valley where all the necessary and indispensable elements for manufacturing are united.

A description of the making of the "armes de luxe" (damascus barrels) may be of interest to those engaged in the trade. Every workman has his special part to perform. They work in separate shops, generally in pairs, having their own tools, and work by the piece; in fact, each pair of workmen have their own little factory. About 2,000 men are engaged in this trade, earning from 3.50 to 6 francs (67.55 cents to \$1.16) a day. The amount paid in wages to these men approximates 2,000,000 francs (\$386,000) yearly. Boys of 15 to 16 years of age earn from 1 to 2 francs (19.3 cents to 38.6 cents) per day, and intelligent men, after four or five years' experience, make 6 francs (\$1.15) daily. They are usually paid by the piece, work ten hours a day, are enabled to provide themselves with proper nourishment, and the most thrifty (of whom there are a large number) own their own homes. Strikes are rare, and a mutual good feeling exists between the employer and employees.

The men are designated according to the work they perform, as "ap-prêteur," "forgeron," "dresseur," "aiguiseur," "polisseur," "foreur," "garnisseur," and "reforeur."

Barrels of medium value are made of coke iron and steel, but superior barrels, the specialty of the valley of the Vesdre, are manufactured from

charcoal, iron and steel. By an ingenious "marriage" of these metals, a composition is obtained which admits of the fabrication of barrels offering all the desirable guaranties of solidity and resistance.

The improvement in the manufacture of damascus barrels dates from the introduction of the fulminate, which superseded the old flintlock. It is true that, before this time, one could find here and there in some aristocratic hands a fowling piece with damascus barrels, but the composition of this damascus was very elementary compared with the present. Forges and workshops were then entirely engaged in making iron barrels, and there were but few barrel makers who produced tubes or barrels known as twist barrels, called by the French "*canon tordu*," or "*tors*," from "*tordre*," to twist, to contort. The ingot for the production of the curled damascus, which is the favorite design for fine guns, is composed of about thirty sheets of iron and steel, each having the thickness of 4 millimeters and a breadth of 120 millimeters, which form a square mass about 50 centimeters long, and are enveloped in a box of common thin sheet iron, or by small wires at each end. The package thus prepared is put into an oven and welded together at the lowest possible temperature.

Too great a heat destroys the metal, and yields a burned damascus showing a small, if any, design. Each barrel receives one hundred and fifty welding heats while being forged, making three hundred heats for a double barrel. If one of these welding heats is unsuccessful the barrel may be a failure, either by the alteration of the damascus or by a trace of the smallest imperfection in welding. Swedish iron is not used in forming curled damascus—only refined charcoal iron of Belgium, which gives a greater contrasting hue to the steel, and can be welded at a lower heat.

After the ingot is welded, it is rolled into small square rods of 7 to 9 millimeters, according to the design of the damascus desired. The rods are then drawn into ribbons by the barrel smiths, in whose hands they undergo a high degree of temperature in order that every meter of the rod shall show two hundred twists. Here again the superiority of the charcoal iron is noticed in the fine twist; coke iron can only be imperfectly twisted, and gives a coarse damascus. The more charcoal iron is hammered by the smith the harder it becomes and the metallic elasticity is increased, while the contrary effect takes place in compositions made from coke iron. The rods twisted in this manner are united in groups of two and six together, according to the thickness of the barrel at the muzzle. The twists are less at the thickest part of the barrel, gradually increasing as the barrel becomes thinner. The ribbon thus prepared is wound around a mandrel forming a spiral, inside of which is placed a sleeve which gives a stiffness to the roll after the mandrel is taken out, and also aids in welding the barrel. After the barrel is welded and forged this sleeve is bored out, the barrel straightened, made lighter, polished, and ground on a grindstone, which gives a more perfect equality in the thickness of the tube than can be obtained with a lathe.

The barrels are then garnished and trimmed, which consists in uniting both barrels together with tin or brass. This process must be done with great care, since the quality of the gun, especially for accurate shooting, depends largely upon it. It is preferable that importers of these gun barrels should purchase them garnished and completely finished.

No official test is given to these "armes de luxe," but they are subjected to a thorough shooting proof by the manufacturers before delivery.

In the valley of the Vesdre are annually produced about 300,000 pairs of damascus barrels, representing a value of nearly 3,500,000 francs. This work being hand work, and 2,000,000 francs paid to the workmen in wages, there remains but 1,500,000 francs for the materials used and the profit to the manufacturer on his products.

The principal countries to which these barrels are exported are the United States and England. About half the barrels made in the valley of the Vesdre are sold to the manufacturers of firearms in Liege to be mounted.

The gun barrels referred to have received high awards at the expositions in Paris (1867, 1878, and 1889), Philadelphia (1876), Brussels (1880), Clève (1881), London (1884), Antwerp (1885 and 1894), and Chicago (1893).

HENRY W. GILBERT,

Consul.

LIEGE, *November 8, 1895.*

AUTOMATIC CAB REGISTERS IN PARIS.

Trials have recently been held in Paris, under the supervision of the prefecture of the Seine, to decide upon the merits of automatic cab registers, or "Compteurs kilométriques," as they are called in France, for the use of public cabs.

These registers must indicate the length of time the passenger has used the cab, the distance traveled, and the amount of fare to be paid. This is an important requirement, protecting both the owners of the cab and the passenger, and if the conditions imposed by the prefecture are fulfilled, will do much to obviate the old standing evil of cabmen's extortion.

Similar registers, or "compteurs," have already been in use in Paris to some extent, but have apparently not met with the entire approval of the prefecture, since it invited the submission of more perfect machines and gave the inventors ample time in which to exercise their ingenuity, the time fixed being from April 1, 1893, to April 1, 1896.

As a means of practically testing his invention, each inventor was allowed the use of twenty-five cabs and given one month in which to demonstrate the effectiveness of his register. Before being allowed to make this test, however, each inventor had to fulfill certain preliminary conditions, which only two succeeded in accomplishing. The conditions in full, as published by the prefecture of the Seine, were as follows: The "compteurs" must all have

a uniform external appearance. They must be placed on the coachman's box and at all times visible to the passenger, and the figures must be at least 1 centimeter in height. The face of the "compteur" must show (1) the time; (2) the sum payable in francs and centimes, indicating fractional parts of the kilometer corresponding to the fraction of the unit of price; (3) the number of kilometers and fractions of a kilometer traversed by the cab, and (4) the condition of the cab, *i. e.*, whether "loué" (engaged), "libre" (free) or "au pas" (by time). A bell must sound to call the attention of the passenger when changes occur in connection with the machine.

A lever manipulated by the coachman must show truthfully the amount due by the passenger, and must not leave any part of the trip traveled to be paid by a succeeding passenger. When the cab is stopping during the time it is hired, and when commanded to go slowly, the machine must indicate a distance traveled on the basis of 8 kilometers an hour.

For the protection of the proprietor, the "compteur" must show (1) the number of kilometers traveled during the day; (2) the total period of occupation by different passengers, and (3) the period of occupation by each passenger. The first condition must be produced by the presence of a passenger in the cab, and the two last must be produced without any intervention on the part of the coachman.

The Paris New York Herald gives the following description of the two successful machines:

The register of MM. Guenet and Kusnick is composed of two axes, placed one at the side of the other, and the kilometrique axis is made to move with the rotation of the wheels of the vehicle by means of an air pump which forces forward a cog divided proportionally to the diameter of the wheel. The "axe horaire," or time axis, is moved by the clock placed in the machine. When the cog stops the latter axis is set in motion, and *vice versa*.

M. Joudet, on being seen by a Herald correspondent in regard to his invention, said that he thought no one firm or maker could turn out the whole quantity in a satisfactory time; that there was room for several manufacturers of these "compteurs," at all events in Paris. He had already taken out patents for his invention in France, Germany, the United States, England, Italy, and Belgium.

M. Joudet described the principal points of his invention as follows: The "compteur" is set by the driver according as the vehicle may be engaged, disengaged, or traveling by time, by means of a rod made in one piece with a sliding plate which arranges the mechanism of the "compteur" according to the character of the hiring. There are two independent barrels, the barrel of the "compteur" being stopped when the carriage is disengaged by a lever coming into contact with a pin on a wheel united by gearing with the barrel. The numbered disks indicating the kilometers are rotated by a screw on a shaft gearing with a wheel united to its spindle by a ratchet and pawl, which allows the vehicle to back without affecting the gearing. The wheel spindle acts at every quarter of a kilometer upon an arrangement of levers and a pawl, which, rising again under the impulse of a spring, rotates the first disk through one division. The disks which indicate the fare to be paid by the hirer are rotated by a second screw on the shaft gearing with a wheel which transmits the motion by gearing to a wheel carrying pins which act on two levers, thereby liberating another wheel and causing the barrel of the "compteur" to turn a shaft to make one rotation. This operates a slide, which, by means of a jointed finger, advances the first disk to the extent of one division. The totalizer for the fares to be paid, is operated by the sliding plate. This plate is provided

with three spring fingers which, when the plate rises at the hiring of the vehicle, advances the first indicating disks three divisions and increases the sum indicated 75 centimes.

A third machine was submitted by M. Dicard, which failed to meet with the terms of the first conditional acceptance.

THOS. EWING MOORE,
Commercial Agent.

WEIMAR, *October 22, 1895.*

AMERICAN TRADE WITH SPAIN AND SPANISH AMERICA.

What can we do to introduce our goods into your consular district; how can we best facilitate commercial intercourse between the United States and the country to which you are accredited; what recommendations would you make, what suggestions would you offer, what methods would you propose to improve and extend our trade in the country in which you are located? Scores of such questions find their way into the consulate, coming from manufacturers, exporters, and commission houses located in different parts of the United States.

TRADE WITH SPANISH AMERICA.

Doubtless, these questions have been answered again and again. Recommendations have been made from time to time, and suggestions have been offered as to advisable methods to pursue in this matter. I know that during the time I had the honor of being in the consular service in Venezuela and Brazil, much that was recommended by the different consuls was acted upon by some of our manufacturers and exporters, and profitable results followed. I feel certain that our people could secure the bulk of the imports to Brazil and Venezuela, if they would act upon the suggestions offered by those who are competent to make them.

With our present facilities for turning out manufactured products, many of these products being superior in quality, finish, and style to the same class of products manufactured in European countries, and in many instances cheaper also, there is no good reason why our people should not have a large share of the South American import trade. I wish to say that from my knowledge of those in business in the two countries above mentioned, I am satisfied from the sympathy manifested by reason of their being Americans and having republican forms of government, other things being equal, they would prefer to make their purchases from us. Generally speaking, common bonds of sympathy, or similar forms of government are not considered by a purchaser where a question of dollars and cents is concerned. A practical buyer does not purchase goods on a sympathetic or sentimental basis. His purpose is both to buy and to sell most favorably and most profitably for himself. Yet there is no denying that there runs through the commercial mind an underlying feeling or disposition to purchase from one who is friendly rather

than from one who is apparently unfriendly, provided the article to be purchased is the same in price and quality in each case, and provided a similar profit can be made by purchasing from the friendly party as from the other. There may be, as the saying goes, no friendship in business; but there is oftentimes a tinge of sentiment, from one cause or another, which is frequently manifested in different ways.

While residing in the countries above mentioned, as I have taken occasion to state, I noted that the disposition of the native importers to purchase more largely from the United States was very pronounced. That those importers do not purchase more than at present is not their fault, but rather the fault of our own people in not affording them facilities similar to those given them by European countries, viz, steamship lines, banking houses, variety of designs, patterns and styles of goods, proper packing, and other details that have time and again been set forth in consular reports.

AMERICAN TRADE WITH SPAIN.

But what can be said of our trade with this country—Spain? I will answer by saying if this consular district (Malaga) serves as an example of our trade, then practically we have no trade with this country. We send to this country only just those things that the people must have and can not probably get elsewhere so advantageously—wheat, cotton, petroleum, and staves. These four articles are brought to this consular district from the United States—nothing more. I presume it is the same as to other Spanish ports.

The manufacturer, the exporter, the commission merchant may well ask: Why does not Spain buy our cotton and our woollen goods, our hardware, our boots and shoes, our dressed leather, our large variety of excellent canned goods—meats, soups, vegetables, milk, and fruits? While the importation of these articles may not be large, yet it is something, and only an insignificant part of it comes from the United States—even this small part does not come direct.

I took occasion last week to visit the three largest dry goods houses in this place, and perhaps the three largest in southern Spain doing a wholesale and retail business. Each house has from seventy-five to one hundred and fifty employees. The sales of each average in ordinary years from \$1,000,000 to \$1,250,000, which is a good business for a city of about 135,000 inhabitants. The proprietors in each case were very courteous and obliging, taking me through the various departments of their extensive establishments, pointing out the kind and quality of goods they carry, and telling me with the greatest frankness where they make their purchases, and in many cases the cost of the articles. They showed me goods, ready-made and otherwise, both for women and men, purchased in Spain and in France, England, Germany, China, and Japan. These included silk, cotton, and woollen goods—good, indifferent, and poor—and fancy articles of wearing apparel of every shade and variety. When I asked if they had in stock any goods purchased in the United States, each replied, “Not a yard of any

kind." "But why do you not purchase from the United States?" I asked. "Have you not seen samples of dress goods manufactured in the United States? Are you not visited occasionally by the commercial travelers from the United States carrying samples of our manufactured goods?" To this they replied, one and all, that they knew nothing whatever about the manufactured goods of the United States. No one with samples of goods from our country had ever called upon them during the years they had been in business. They have no business connection or correspondence of any kind with any parties in the United States.

They said, further, even if the price of an article they might wish to purchase in the United States were lower than the price of the same or a similar article manufactured in France or England, still, on account of there being no commercial treaty with the United States, the duty is higher, and this would debar them from purchasing there. With France, England, Switzerland, and some other countries, Spain has a commercial arrangement whereby goods are entered at a lower rate of duty than from those countries with which no such treaty exists. But even with this lower rate of duty in favor of goods coming from these countries, as against the United States, the rate is still so high, they informed me, that the bulk of all their plain and fancy dress goods and all sorts of cotton goods and drilling, and woolens and silks, is the manufacture of Spain. The Province of Catalonia is the chief place whence nearly all their goods come, with the exception of some of the woolens, which are purchased at the woolen mills of Antequera, in this province. Some of the coarser grades of cotton goods are manufactured in this city and sold both in the city and throughout the province.

It is clear from the opinion of these merchants that there are at least two great hindrances in the way of the Spanish dry goods importer bringing his goods from the United States—one, the absence of steamships direct to the United States; the other, a discriminating duty on articles the product or manufacture of the United States. It is not intended as a discriminating duty, but it is rather the want of any commercial arrangement placing our products and manufactures on the same basis as the favored nations. The duty on common wearing apparel and fancy goods brought from the United States is from 20 cents to \$1 per kilogram higher, and often more, than on a similar class of goods coming from England, France, Switzerland, and some other countries. The higher rate of duty, together with the higher freight rates, because of no direct steamships from the United States, are good and substantial reasons why there is no purchase of dry goods in the United States by the Spanish importers.

A call on, and an interview with, the proprietors of the principal hardware stores, shoe stores, the dealers in provisions and canned goods, meats, soups, fruits, condensed milk, etc., clearly confirmed what the dry goods merchants stated as to the impracticability and unprofitableness of importing from the United States any of the manufactures in their respective lines of business. The proprietor of the largest hardware store—an extensive estab-

lishment doing a very large business—said to me that he had a few articles in the line of carpenters' tools which were manufactured in the United States but purchased in Hamburg. He has no correspondence with the States and never had any. He had never seen in Malaga any one from the United States exhibiting any kind of goods in his line of business. From the experience he has had in handling carpenters' tools manufactured in the United States, he stated that he found these tools superior, as a rule, in style, finish, workmanship, and quality to any he had bought elsewhere. He said:

Your chisels, saws, files, hammers, and locks and keys are superior in every way to those manufactured elsewhere. And such scissors and shears I have never found manufactured in any other country. They are more expensive, but they are much superior. If your Government had a treaty of commerce with Spain so that your goods would be subject only to the same duty as similar goods from England and France and some other countries, and you had direct steamers, I am free to say I would purchase the bulk of my goods in the United States. I like the goods so well, and they give such excellent satisfaction.

Even though goods manufactured in the United States be purchased in a country having a treaty of commerce with this country, yet such goods must pay the higher rate of duty. A certificate of origin must be presented at the custom-house to show the place of manufacture. In addition to this higher duty, the English, French, or German commission merchant through whom the goods are purchased must make his profit; then there is the higher freight on goods not coming direct but in a roundabout way. These impediments make the wall so high that goods from the United States are really shut out.

The following are the rates of duty with the United States and with treaty nations. The higher rate in every instance is the rate on the article manufactured in the United States:

Articles.	Nontreaty rates.	Treaty rates.
	<i>Pesetas.</i>	<i>Pesetas.</i>
Chisels.....per 100 kilograms...	66	55
Hammers.....do.....	30	25
Saws.....do.....	66	55
Files.....do.....	6	55
Scissors.....per kilogram...	3	2½
Knives and forks.....do.....	2	1½
Razors.....do.....	2	1½
Locks:		
Steel.....per 100 kilograms...	38½	32
Cast iron.....do.....	10½	8½
Copper.....per kilogram...	1½	1½
Gimlets and augers.....per 100 kilograms...	66	55
Planes.....do.....	66	55
Hinges.....do.....	38½	32
Screws.....do.....	30	25

Should I run through the entire hardware list, I would find that the higher rate of duty must be paid on all the goods entering Spain from the United States.

The importers of canned goods, upon whom I called, stated, in substance, what had been said to me by the dry goods and the hardware merchants. These importers carry an insignificant quantity of canned stuff put up in the United States. They can not purchase goods there on account of the higher rate of duty, which ranges from 10 to 20 cents per kilogram more than with the treaty nations.

In speaking with one of the largest importers of canned goods, I noticed scores of tins of condensed milk put up by the Anglo-Swiss Condensed Milk Company. This milk sells here for $22\frac{1}{2}$ cents per tin of 1 pound. I said to the proprietor: "I see you have some Chicago beef, hams, tongue, etc., but I see no tins of condensed milk manufactured in the United States." "Yes," he replied, "I carry a few tins of canned stuff put up at Chicago for the few people here who can afford to purchase these goods; however, I make my purchases of these articles in England, as I have no correspondents in the United States. The duty is so high that the mass of the people can not afford to buy these goods, and as for purchasing condensed milk in the United States it is out of the question altogether." "But," I said, "you can buy the milk much cheaper in the United States than in Switzerland." "About that I don't know," said he. I then showed him an advertisement in a late number of an American journal of a New York condensed milk company printed in Spanish, quoting the price of condensed milk at \$4.25 per box of 48 tins of 1 pound each free on board in New York. When the gentleman read it he remarked, "Yes, that is much cheaper than the Swiss milk for which I pay from \$5.25 to \$5.50 per box of the same number of tins having the same weight." "But," he added, "there are the freight and duty, which would amount to much more than the difference in the cost in the two countries," which statement surprised me somewhat. However, on examining the tariff schedule, I found condensed milk from the United States pays a duty of 37 cents per kilogram, which is $16\frac{1}{2}$ cents per pound—almost twice the price of the milk free on board in New York, and within 6 cents of the retail price of the Swiss condensed milk sold in Malaga. The duty on Swiss milk is a little more than 9 cents per kilogram ($2\frac{1}{4}$ pounds).

It is very evident then that under existing conditions of the Spanish tariff, the exporter of the United States can not send his canned goods to this country. If the duty on such goods were the same as on similar goods coming from other countries, we could secure the market at once.

The shoe dealers I visited informed me that no shoes are imported except for a very few families. The high rate of duty shuts out importation under this head. Nearly all the shoes are made in the place by local dealers—not by machinery but by hand. The stock of leather is chiefly brought from Barcelona and Madrid. Some of the shoe dealers doing an extensive business, thought it would be a good plan for some American house to establish here in Malaga a sort of leather depot, as there is nothing of that kind in this part of the country, keeping on hand whatever material is necessary for the manufacture of shoes, with shoe blacking, dressing, etc.

Notwithstanding the duty on leather from the United States is about 15 cents more per kilogram than from the treaty countries, still the gentleman seemed to think such a depot located here would prove profitable, as it would have not only this city and province to trade with but the entire western part of southern Spain.

In passing one of the large shoe stores on the main street a few days since, and glancing at the show window, I thought I saw a bottle of American shoe dressing. I stepped in and asked the proprietor if he imported the dressing in the show window direct from Boston, Mass., and what he asked per bottle. He replied: "No, I do not import it direct but buy it from parties in Madrid, where I also buy all the Russia leather and other kinds that I use in the manufacture of shoes. The price of the dressing is 1½ pesetas per bottle," (30 cents with the peseta at par).

This gentleman also asked why some enterprising American does not establish in Malaga a house for the sale of leather of all kinds for shoes and other purposes for which it may be used. As I stepped out of this shoe store, I saw a large drug store on the opposite side of the street and entered. I sent my card to the proprietor; presently, he put in an appearance. In the course of the interview I had with him, I asked what drugs, medicines, etc., if any, he imported from the United States. He replied: "I import nothing direct, because there are no direct steamers. What little in my line I receive from the United States I buy in France and England." I asked him how the manufactures of the United States compared with the same class of drugs bought in England, France, or Germany. "Generally speaking," said he, "the manufactures of the United States are superior to those I buy from other countries. And, let me say, if there were direct steamers to New York and a commercial treaty with your country and banking facilities so that I could remit direct instead of through London, I would buy the greater part, if not all, I need in my line in the United States. As the matter stands to-day, I can not do so. Every drug purchased from the United States comes by way of England, France, or Germany, which makes the freight higher. Added to this is the profit to the party in England, France, or Germany from whom I buy. Then the higher rate of duty comes in because your Government has no commercial treaty with Spain. There is still another additional expense in remitting through London, as there are no banking facilities here to remit direct."

It may be noted that the views of this gentleman, one of the principal druggists of this city, coincide with the views and opinions of the other merchants with whom I spoke, regarding this, to us, important subject. I would suggest, in this connection, that whenever our merchants and manufacturers send their circulars, catalogues, and periodicals, that they be printed in the language of the country to which sent, so that when distributed to importers they can be read and understood. But better than catalogues or circulars or letters to consuls are representatives of American manufacturers who speak the language and carry samples of their goods. Still better than

either, in my opinion, is a sample house or a depot of our goods established in the place, with an active, enterprising agent who can speak the language and can permanently remain in charge of the house. I would say I am as solicitous as one well can be to see our manufactured goods in every foreign market, and have labored for this end in the countries in which I have had the honor to serve our Government, but no American consul or business man can place our goods in foreign markets when all the conditions for so doing are unfavorable both at home and abroad.

So far as the Spanish merchants and importers of this city are concerned, I feel sure from the tone of their conversation, from the opinions and views so favorable to our products and our manufactured goods, from the civility and courtesy shown me when I called upon them, from their frankness in giving me information relative to their business and where they buy, that, under more favorable conditions, they would purchase most of their goods in the United States. And I have no reason to doubt but that the merchants and importers throughout the other parts of Spain are just as friendly toward our people and as well disposed toward us as the merchants and importers of Malaga.

I wish to say, in closing this report, that I sought the interviews, as above, with the leading merchants of this city in the different branches of business referred to, in order to answer as satisfactorily as possible the questions regarding which our manufacturers, exporters, and merchants have requested information, and in which they are personally interested. To embody the answers to the questions in a report seemed to me better than to respond to each letter received. The views and opinions of the merchants interviewed, based as these views and opinions are on common sense and the facts as they are found to-day, should make it clear that when we have a favorable commercial arrangement with this Government, when we have steamships direct to New York or other United States ports, and when—though this is not indispensable—we have banking facilities for remitting direct, instead of through London, then we will have no trouble in securing a large part of the trade in this port, and, I firmly believe, a large part of the import trade of every port of Spain.

DAVID N. BURKE,
Consul.

MALAGA, *November 11, 1895.*

SPANISH INDUSTRIES.

COTTON GOODS INDUSTRY.

General statistics.—In 1890, 109,866,777 pounds of raw cotton were imported into Spain and were operated upon by 3,000,000 spindles and 68,289 looms, and were transformed into 41,300,000 meters of cloth. The amount of coal consumed in the manufactories was 194,000,000 kilograms (213,841 tons), nearly all of which was imported. More men are employed

in this industry in Spain than in any other save agriculture. To-day Spain weaves every kind of cotton, from the finest to the coarsest, and produces threads from No. 70 up to over No. 100. In many of the manufactories the work is carried on day and night.

Cotton thread.—In this branch of industry there are now 3,000,000 spindles. The capital employed is \$40,000,000; horsepower, 19,500; workmen, 34,860. The amount of coal consumed is 94,620,000 kilograms (104,319 tons) yearly.

White piece goods.—This was the first kind of Spanish cotton goods that were sent out to compete in the world's markets with the English. In 1894, the following quantities were exported from Barcelona, which is the cotton center of Spain, and which is the fourth cotton port in Europe, ranking after Liverpool, Bremen, and Havre:

To—	Quantity.	To—	Quantity.
	<i>Kilograms.</i>		<i>Kilograms.</i>
Cuba.....	2,010,771	Canaries.....	3,943
Puerto Rico.....	363,596	Marianas.....	3,182
Philippines.....	30,794	Other American countries.....	12,405
Argentine Republic.....	5,091	Other nations.....	8,239

Cotton thread lace.—In this branch 10,000 workmen are employed in the town of Mataro, near Barcelona, and 38,000 are at work in other parts of Spain. The number of looms is 58,266, and the capital invested is about \$15,000,000.

Dyed cotton.—In this branch much taste is displayed, and satisfactory results have been obtained in rendering the colors durable and fast. The number of looms is 10,034; workmen, 32,000; and the annual production, 48,800,000 meters of cloth. The quantities exported are:

To—	Quantity.	To—	Quantity.
	<i>Kilograms.</i>		<i>Kilograms.</i>
France.....	1,095	Argentine Republic.....	25,342
England.....	956	Martinique.....	2,394
Germany.....	663	Mexico.....	4,280
Italy.....	190	Trinidad.....	2,033
Austria.....	50	Uruguay.....	5,042
Morocco.....	10,816	Venezuela.....	3,190
Fernando Po.....	10,986	Cuba.....	659,330
Canaries.....	14,220	Puerto Rico.....	858,904
Singapore.....	1,513	Manila.....	727,211

Cotton velverets and velvets.—These goods are not exported, and are produced only to the value annually of about \$1,000,000. They are made into clothing for men, trimmings for ladies' gowns, and carpets and curtains.

Cotton blankets.—These goods are exported only to the Spanish American colonies. About 1,000,000 blankets are exported annually, but the demand for them seems to be diminishing, owing to duties and foreign competition.

Miscellaneous facts.—The total number of spindles in Spain dedicated to cotton is 2,614,500, and of looms, 68,300. The entire capital employed is about \$60,000,000.

The cotton ribbon manufactories are situated in Barcelona (71), Igualada (5), and in Andalusia. The thread manufactories are in Barcelona (104), Manresa (12), Igualada (7), Palma, Mahon, Cabrera, Carme, Mataro, Suria, and San Quintin de Mediona. In Barcelona there are also 437 manufactories of cotton woven goods, 40 in Igualada, 22 in Palma, 14 in Valls, 13 in Reus, 11 in Manresa, and 6 in Tarrasa, the remainder being in Berga, Don Benito, Monistrol, Sabadell, San Martin de Provencals, Vich, Roda, Manlleu, Puigreig, Villanueva, Priego, Llivia, Olot, Puigcerda, Motril, Vergara, Jaen, Malaga, and Valladolid.

The cotton-thread workmen generally receive pay according to the amount of work they do, the weavers being paid by the piece, the other workmen by the day. The average wages paid are the following:

Class.	Per week.	Class.	Per week.
Directors or superintendents.....	\$12.00 to \$25.00	Firemen.....	\$3.00 to \$6.00
Major-domos.....	8.00 to 10.00	Thread makers and weavers.....	4.75 to 6.00
Assistants.....	4.00 to 6.00	Carpenters.....	4.75 to 6.00
Machinists.....	4.00 to 16.00	Ordinary workmen.....	3.00 to 4.00

In Barcelona and adjacent towns the average workman's wages are $3\frac{1}{2}$ pesetas (less than 70 cents) per day.

Most of the cotton that comes to Spain is from the United States. The American bales weigh about 450 pounds, which is 50 pounds more than bales that come from India, and 350 pounds less than the Egyptian bales. From the United States about \$15,000,000 worth of raw cotton is imported per annum.

The imports of the manufactured articles from England and other countries amount to about \$3,000,000 annually.

SILK INDUSTRY.

Spain was the first occidental nation that manufactured silk. In Granada, from the eleventh to the thirteenth century, silk cloth was made in sufficient quantities to supply some foreign markets. During the fifteenth and sixteenth centuries, nearly 1,000,000 persons were employed in Andalusia in producing various kinds of silk goods. Seville was the center of the industry, and had at that time 120,000 looms. The average annual production of silk goods in the first half of the seventeenth century amounted to 640,000 kilograms. High taxes, foreign competition, and internal disorders then began to diminish the importance of Spain's silk trade, but after the war of independence in 1817, Ferdinand VII succeeded in reanimating this industry, and soon the average annual production amounted to \$15,000,000, most of the looms being in Manresa, Barcelona, Reus, and Valencia. Since that time, the importance of Spain as a silk producer has diminished

rapidly. Her silk exports amounted in 1892 and 1893 to only \$10,000 a month, and during the first five months of this year (1895) they have amounted to only \$600 a month. At present, the best goods produced are those of Valencia, Almagro, and Catalonia.

PAPER INDUSTRY.

Spain produces 85 per cent of the paper she uses, and exports much to her colonies. In Catalonia alone, there are 27 manufactories of plain paper and 32 of other kinds. In the rest of Spain, there are 200 manufactories of paper, the principal ones being in Tolosa, Madrid, Bilbao, Seville, Valencia, Saragossa, and Segovia. The manufactories in Tolosa produce 45,000 kilograms daily, and some single factories in Valencia and Saragossa produce 12,000 kilograms each daily.

Barcelona is the center of the manufacture of cigarette paper. Two houses alone produce 180,000 reams a year, valued at \$60,000. Each ream consists of 500 sheets, and each sheet measures 51 by 33 centimeters, large size, and 46 by 32 centimeters, ordinary size. The exportation of cigarette paper from Barcelona amounted to 1,033,562 kilograms during the year 1894.

There are also in Spain many manufactories of packing and blotting paper and pasteboard, and these goods are also exported to the Spanish colonies in large quantities. The blotting paper is so poor that the greatest care must be taken to prevent it from becoming literally "blotting" paper. If the native article were not so cheap, our American blotting paper might be sent here; but Spaniards are very economical, and, as a rule, they regard the price rather than the quality of the article they desire. They have no passion for saving time, such as we have, and they like what they have and are not eager to get anything better.

WOOD INDUSTRIES.

There is so little wood in Spain that the small boy knows nothing of the joys of whittling, and develops no ambition to become a carpenter. The result is that the carpenters are few, and their shops are not well provided with modern tools and machinery. From molds and lathes, scarcely \$600,000 worth of goods are turned out a year in all Spain. The best shops are in Barcelona and Seville.

In Barcelona, there are also many furniture factories. Beds and chairs are produced in large quantities, and the common kinds are very cheap. Much wood is imported into Spain for ornamental articles, and also considerable expensive furniture is procured, entirely finished, from France. The most famous woodwork in Spain is that of images, which, for centuries, have been carved here with signal success, and are always in great demand in the South American republics.

So far as I can learn, Barcelona is the only Spanish city that produces billiard tables, balls, and cues. They are not worthy of comparison with the same articles manufactured in the United States, but they have to serve their purpose because of the high protective duties.

Spain being a great wine country, barrels and casks are made in large numbers. Most of the staves come from the United States and Austria. The wood for corking purposes is produced in Spain. She has large cork forests. In the provinces of Gerona and Barcelona, corks are made annually to the value of about \$8,000,000; moreover, \$6,000,000 worth of cork wood is annually extracted from the forests in those provinces. In Andalusia, there are also extensive cork forests, but American purchasers would do well to secure their corks from the province of Gerona, as there orders can be more rapidly and satisfactorily filled.

Very little attention is given in Spain to cultivating forests, and yet the constant freshets and inundations throughout the peninsula should make the advisability of planting trees apparent. Lately, some desultory attempts to introduce the eucalyptus have been made, and very likely in time, this wonderful tree will be found to be worth more to Spain than are any of her colonies.

SPANISH FANS.

The center of the fan industry in Spain is Valencia, 20,000 workmen being employed there in this industry, while many thousands more in the contiguous villages dedicate their time exclusively to mounting fans in their homes. The woods most commonly used are the pine, beech, and olive for ordinary fans; the violet, sandal, birch, ebony, and lignum-vitæ are secured for the finer kinds, while the most expensive are made of shell, mother-of-pearl, and ivory. The ribs are manufactured in the city of Valencia, and there, too, work all the designers, painters, and lithographers employed in producing paper fans and oleographs, some of which contain as many as twelve colors or tints. The cotton and silk material that is used is not produced in Valencia, but comes from Lyons, St. Etienne, and England. Large quantities of Spanish fans find their way all over the world, but they have never yet been able to compete very successfully with the Japanese fans, which are much lighter in weight and rather less expensive.

FEATHER GRASS.

This is a plant indigenous to the Mediterranean coasts, and its zone extends from the center of Spain to the northern part of Africa, while it is also found anywhere from the level of the sea to the height of 3,000 feet. It is found wild in the roughest and most arid soil. It grows in a heap, sprouting every year, and putting forth acrospired panicle flowers and coarse leaves, which terminate in a point.

It is abundant and cheap, and many a working man, during the long evenings of winter, transforms it into baskets, panniers, cords, and tackle; but machinery does much more with it, making it compete with hemp in the manufacture of cloths, cords, fillets, cables, and other articles of navigation, fishing, and mining. It is also used extensively in making paper, but it is principally used in the manufacture of matting. In the province of Alicante, the whole population of Crevillente devote themselves to this industry exclusively, and they produce some very artistic work.

ALPARGATAS.

These are a sort of shoe or sandal made of hemp, and are much worn in Spain by persons of all classes. They are light, comfortable, and suitable, generally speaking, to the climate and soil. In the infantry regiments, they are used exclusively in Spain, but special shoes are made for foreign campaigns, as, for instance, "guagiros" are now being made for the soldiers who go to Cuba, and they are stronger than alpargatas and more expensive.

The alpargata is a lineal descendant of the old Roman sandal, and was first used in the "kingdom of Arragon," but its use spread over all Spain. More than one hundred different kinds are now to be seen. They are made chiefly in Catalonia, Arragon, the Balearic Islands, and Valencia.

MACHINERY.

Spain has been, of the greater nations, perhaps, the most reluctant to lay aside her ancient and mediæval tools, and to avail herself of modern implements and machinery to advance her agricultural and commercial interests. In the country districts, the prejudice against modern labor-saving inventions is still very strong, and even in the cities little general disposition is shown to acquire the most approved mechanical appliances. Still, it may be safely said that in this northeastern part of Spain, which does about one-third of all the trade of the peninsula, there is a very perceptible chasm, constantly broadening, between the past and the present, and there is clearly a growing consciousness that the things and thoughts of yesterday should not be the forces and hopes of to-day.

In Barcelona, there are now a number of machine shops which produce steam engines for railways and compound engines of triple and quadruple expansion, and machinery for agriculture, for making paper, for cutting and perforating and sewing, for transmitting power to windmills, and for regulating electrical devices. One firm alone has machinery representing 30,000 horsepower, and 2,000 electric motors of a force amounting to 3,300,000 watts. In constructing machinery for vessels, some of the Spanish houses have been very successful. The following table shows the number of steam machines now in Spain and in Spanish vessels:

Description.	Number.	Horse-power.
Fixed motors:		
Large industrial.....	10,000	100,000
Ordinary industrial.....	796	20,136
Small industrial.....	2,600	7,600
Movable motors:		
Locomotives for railways.....	1,466	455,227
Marine—		
War.....	151	72,876
Merchant.....	552	62,827
Hydraulic.....	3,300	75,401
Total.....	18,865	794,067

As comparisons are interesting, I will add that in 1887, France had a total of 70,390 steam machines, representing 4,723,835 horsepower.

ALIMENTARY PRODUCTS.

Spain exports to her colonies and to the South American republics many "alimentary substances." Wherever there is a colony of Spaniards, there will be found garlic and oil, if nothing else, and those two articles and wine are exported in large quantities from here to nearly every such colony in the world. The best garlic and the greatest amount of it proceed from Vendrell, Panadés, Barcelona, and Tarragona. The oil that is exported is produced principally in Tortosa and Reus, and from Arragon and Andalusia. From nearly all of the ports of Spain of any importance the native wines are exported. As a rule, Spanish wine is very heavy and more than ordinarily pure. It is mixed with French wines, and some successful attempts have been made to mix it with California wines. Formerly, much Spanish wine was sent to the United States, but our duties are now almost prohibitory except for sherry and one or two other kinds of Spanish wines that Americans will have regardless of cost; but even California sherry is competing now with the true and original sherry, and it is likely that the quantity which Spain exports to the United States will diminish steadily, although perhaps not rapidly. The same may be said of the quantity Spain sends us of Malaga grapes and Denia raisins. In short, it looks as though the exports of Spain to the United States would decrease from all parts of Spain except Barcelona. The imports from the United States, however, will undoubtedly increase, as the demand here for cotton, petroleum, and staves grows every year, and Americans are also getting more persistent in trying to introduce here other articles more or less needed by the Spanish people, such as wheat and lard, agricultural implements, and sewing machines. The average amount of exportations from Spain to the United States is about \$3,250,000, while the average amount of importations is about \$18,000,000.

In addition to the exportations of garlic, oil, wine, grapes, and raisins, Spain ships to America, and chiefly to our sister republics, almonds, filberts, olives, anise, saffron, pepper, brandy and liquors, onions and preserves, and also pastes for soups, sirups, glucose, and mineral waters. The nuts are grown in Tarragona. The olives come from Barcelona, Andalusia, the Balearic Islands, Tortosa, and Reus. Barcelona and Valencia are the onion markets. The anise is the export of La Mancha, and also of Extramadura and Andalusia. The saffron is grown chiefly in La Mancha, Aragon, Valencia, and Castilla la Nueva; the pepper in Murcia and Castilla la Nueva; and the onions in Barcelona and Valencia. The brandies and liquors are manufactured in Barcelona and Badalona. Barcelona also prepares the greatest quantities of preserves, but large quantities also proceed from the Balearic Islands, Reus, Saragossa, and Valencia. In Barcelona, that is to say in the city and province of Barcelona, there are nearly one hundred factories of pastes for soups of vermicelli and macaroni, and they more than

supply the export trade. The sirups and glucose are manufactured in San Martin de Provencals, and two of the factories there produce 2,000 kilograms of sirups per day. The mineral water proceeds principally from Barcelona.

HERBERT W. BOWEN,
Consul-General.

BARCELONA, *August 24, 1895.*

THE OLIVE TREE AND OLIVE OIL IN TUSCANY.

The olive tree forms one of the chief agricultural resources of Tuscany. It is estimated that about 270,000 acres are devoted to its cultivation, and that an average crop of olives yields about 6,700,000 gallons of oil. Tuscan olive oil is essentially a high-class food product. When obtainable from sound, well-matured fruit, with due skill and attention devoted to the process of extraction, as well as suitable appliances, it reaches the very highest standard of excellence and can not be surpassed by the product of any other country. This preeminence is fully recognized in an elaborate report upon agriculture in Italy issued by the Italian Department of Agriculture, Industry, and Commerce,* where, in treating of olive oil, it is stated that "the Tuscan oil of Lucca, Calci, and Buti is considered to be the finest in the world." That this is no vain boast is evidenced by the fact that whenever the genuine product of Tuscany appears on a foreign market, it very soon takes the first place as a table oil, distancing all competitors, where quality is the consideration, by its superior merit. If, in some cases, other olive oils retain some hold in certain markets, this is easily accounted for by the circumstance that, in those particular localities, Tuscan oil has only been introduced recently, while the other oils have been known for years.

Though more generally known out of Italy as "Lucca oil," the production of the finest oil is by no means limited to the province of that name, but extends also to the adjoining province of Pisa and to a few outlying districts adjacent to both provinces. Thus Calci and Buti, mentioned in the report quoted from above, are both situated in the province of Pisa. The olive groves which clothe the hills extending from Viareggio to Pisa, on the Genoa-Pisa Railroad, and from Pisa to Pontedera, on the Leghorn and Florence Line, are famed for the oil they produce.

The conditions which govern the production of olive oil of the highest grade, *i. e.*, oil possessing a delicate flavor, fine light-golden color, of medium density and possessing good keeping qualities, and speaking only here of conditions due to nature as distinguished from those which depend merely upon the mechanical treatment of the fruit, arise from (1) the nature

* *Relazione intorno alle Condizioni dell'Agricoltura nel Quinquennio 1870-1874*; Roma, 1877; 4 vols.

of the soil, (2) the topographical situation of the olive groves, (3) the climate, and (4) the species of olive tree cultivated.

That varieties of soil, topographical situation, and climate exercise a deep influence upon the character of the products of the earth, is a fact so generally known and admitted that little need be said to prove it. Of wine, coffee, cocoa, cotton, tobacco, and an infinite variety of similar products the differences of quality simply due to these causes are very great and none can dispute them. The same is precisely the case with regard to olive oil. Tuscan olive oil differs widely from the product of other sections of Italy, and still more so from that of other countries just as does the well-known Chianti wine of Tuscany from the wines produced in the rest of Italy.

In Tuscany, the finest oil is produced by the olive groves located on the slopes of hills, with a suitable exposure and a subsoil of a rocky nature, preferably of a calcareous nature, or also with some admixture of silicious matter, and from a particular variety of the olive tree. But the same class of trees, if growing in the richer soil of the plain, where there is necessarily greater moisture, will not produce the same quality of oil. The tree, indeed, will vegetate more luxuriantly, but the oil yielded by its fruit, which will ripen sooner than on the hills, will be heavier, destitute of fine flavor, and more highly colored—altogether an inferior article.

Climate has also much to do with the quality of olive oil. Certain varieties of the olive flourish in hot climates, such as Sicily, Tunis, and Asia Minor possess, where the trees grow to a great size, but the oil they yield is gross, heavy, of unpleasant taste, even when made with the greatest care, and disposed to turn rancid almost immediately.

The most select species of olive tree will not thrive in a hot climate. On the other hand, if the climate be at times too cold, though still within the limits which permit of the olive tree's existence, only the hardiest species of olive can be grown—that is to say, the kind approximating most to the common olive—with the result that the fruit of such trees can not furnish fine oil—it will necessarily be rough and bitter to the taste and far removed from what constitutes a choice olive oil.

A climate warm in summer, but strictly temperate, like that of Tuscany, suits the olive tree admirably, while the moderate cold experienced during winter is also beneficial, as it tends to kill off parasitic growths and insects that prey on the tree or its fruit.

There is no variety of the olive tree that can equal the Razzo olive in regard to the quality of the oil produced, and this variety is preferred to all others in the provinces of Lucca and Pisa, where the finest oil is obtained. But it thrives only on the slopes of hills where there is a subsoil of a rocky nature and no excess of moisture. The Razzo olive tree attains a goodly size in the course of years and is very different in this respect to the common olive tree, which has generally a stunted appearance. Its leaves also are larger and less pointed and of a darker shade of color. The fruit is of fair size, but equally removed from the small, rather pointed, berry-like

common olive as from the large fruit of the olive tree of the south, of which the "Spanish" olive is a type. In fact, the Razzo olive occupies an intermediate position between the latter and the hardier kinds above mentioned.

The olive tree in Tuscany is propagated either from seed or from "ovoli"—those protuberances provided with "eyes" which grow on the main roots and at the base of the trunk of the olive. These are excised during the winter and planted, but only three or four can be taken from the same tree without injuring it. The seeding is much hardier and healthier than a plant reared from an "ovolo," but on the other hand its development is very much slower. The former will not begin to bear fruit until it has been about seventeen years in the ground, while an "ovolo" plant may bear in ten years' time. It is reckoned that the olive tree does not attain its full growth and bearing capacity in less than from forty to fifty years; hence it has been observed that he who plants an olive grove does so more in the interests of those who shall come after him than in his own.

The olive in Tuscany is not to be found at a greater elevation than about 1,500 feet. The hill plantations involve considerable expense. It is necessary to terrace the slopes and support the terraces with walls of dry masonry; provision must also be made for carrying off any heavy rainfall. At suitable intervals pits are dug to a depth of 5 or 6 feet and about 4 feet square, stones removed, and the loosened earth replaced; the young tree is then planted in the chamber thus prepared. An acre of land will afford space for about 182 trees, according to the practice in Tuscany, and the expense of such a plantation, exclusive of the cost of the land itself, is estimated at 15 lire (about \$3) per tree, equal to about \$546 per acre, this with cheap labor at about 25 cents per day. The trees are generally pruned and manured at intervals of three years, a certain number of trees being attended to every year so that all are taken in rotation. The expense is put at 2 lire (about 40 cents) per tree, but this without reckoning value of manure or cost of carrying it to the olive grove. A favorite manure is sheep droppings, hence sheep at certain seasons of the year are turned into the groves where they feed upon the grass which grows there; at night they are penned up.

In full bearing, an acre of olives will produce on an average about 64 gallons of oil a year. One year, the quantity may be very much greater, but the following year, after a full crop, the trees will probably bear little or no fruit. The olive blossoms in April or May, according to whether the season be normal or backward. April blossoming is considered more promising of a good result, as the fruit has time to develop before the great heat of summer. In October, the olives begin to change color from green to purple black and to carry oil; but maturity is not reached, even in the case of the fruit most advanced (since all the olives on a tree do not ripen simultaneously) until December; the later fruit may not mature until May, or even June.

Oil made early in December is rather dark colored, peppery, and biting to the palate, the fruit not being sufficiently ripe. From the beginning of the year to March oil of perfect quality is made, tasting of the fruit, but delicate and soft with a fine light golden color. Thence on, the fruit gets overripe, oil of a very pale color is obtained at times of a milky-shade, sweet tasting, but wanting in distinct flavor and liable to turn rancid very soon.

The practice in the best olive districts of Tuscany—that is, where the olive trees are planted in groves, to the exclusion of all other trees or crops, is to gather the fruit day by day as it drops from the tree on to the grass beneath. To strip the trees by hand would be a gigantic task, and would, moreover, involve plucking ripe and unripe fruit, since with a great number of trees the stripping of a tree could not be repeated as the fruit ripened. But when fruit is ripe, by shaking the branches it can be made to fall to the ground on to cloths stretched below. The harvesting of the olive crop calls for an abundant supply of labor; the fruit as it falls or is shaken off the trees must be gathered in immediately and crushed and pressed; otherwise it will suffer rapid deterioration, with the consequence that the oil made from it will be bad. Women and girls are employed to pick the olives; the wage is very low, not exceeding 20 cents per day.

Like all fruit trees, the olive has many enemies, such as insects which attack the fruit and leaves and parasitic growths which fasten on the roots and trunk. But one insect in particular calls for special notice, as it is the greatest enemy that the olive grower can have—the olive fly (*Musca oleæ*), also known as the *Dacus oleæ*. Where it makes its appearance in force, and particularly if early in the summer, the finest crop of olives may be ruined completely, hardly a berry escaping it. In shape it resembles the common house fly, but is only about half its size. Its head is of an orange yellow, eyes green, front yellow with two black spots; the back is of an ashen gray, the corselet has four markings of pale yellow, and the legs and antennæ are also of this hue. The wings are iridescent and transparent, assuming green, golden red, and blue hues, according as the rays of the sun fall on them. The belly is of a dark yellow streaked with black. The female olive fly is provided at its extremity with a sheath-like appendage from which protrudes at will a sort of dart with which it pierces the olive berry, depositing in the aperture thus made one of its eggs. The egg gives birth to a small, white grub, which burrows for itself a chamber in the pulp of the fruit, ultimately leaving little but the kernel and the husk. In fifteen days the grub changes into a chrysalis, and this, in another twelve days, into a fly—the fully developed *Musca oleæ*—which issues forth from what has been its dwelling, and then, in turn, this new generation is ready to begin a similar cycle of operations at the expense of what remains of sound fruit.

The olive fly makes its appearance with the beginning of July, and the genus continues in full activity until, with the approach of winter, the temperature falls considerably. As a single female fly can lay about one hun-

dred eggs, which, in the space of twenty-seven days, develop into as many flies, and these in their turn will originate another brood within a similar period, it can well be imagined what incalculable damage can be caused to the olive crop between the first appearance of the pest in July and the end of October, when it usually disappears. If circumstances suit the insect, hardly a single berry in some localities will escape injury; but, fortunately, it seems that the conditions necessary to its existence and propagation are not generally present.

The olive berries, which have been the habitation of the *Dacus oleæ*, are not deprived of the greater part of the pulp eaten by the grub, but the cavity thus formed admits water and the berry rots, or the olives, when gathered, may still harbor the grub; in both cases what oil is produced therefrom is of the worst possible description and unfit for food, while the yield is only a fraction of what it should have been had the fruit remained sound.

It has been suggested that the only method whereby the olive fly could be totally exterminated would be by gathering all the olives early in the season, when the presence of this insect pest has been established, and passing them through the olive mill forthwith. But this would be very difficult to consummate. It is held by some naturalists that the *imago* (final adult) of the *Musca oleæ*, on the approach of winter, ensconces itself in the clefts and crevices of the bark of the olive trees, whence it issues forth on warm, sunny days only, and that thus the species are reproduced when the summer comes round again. But if this be the case, it becomes difficult to explain how one year it may be present in great numbers, while the next not a single specimen is visible in the same locality.

The olive tree attains to a great age; it may continue to bear fruit for many hundreds of years, but the average life of the cultivated tree is thought to be from 100 to 150 years.

The fruit when taken to the "frantoio," or mill, is hand picked, and all unsound berries removed. It is then crushed in the mill with as little delay as possible. The olive mill has the form of a circular trough, built of cut stone, in which there revolves a perpendicular millstone. The material used for both the trough and millstone must be hard and nonabsorbent. Iron is avoided, as it communicates a bad taste to the oil. The mill is worked by water power, when available, otherwise by animals, occasionally by steam. The millstone must not revolve too fast, or it will heat the olives and the oil will suffer. When the olives are reduced to a uniform pasty mass (no water whatever is added during the grinding), the latter is transferred to flat, circular bags, made of a kind of tough, flexible reed, and having an aperture at the top to admit the olive pulp. A number of these bags, when filled, are placed in a pile under the press, the latter also often worked by water power. On pressure being applied, the oil streams forth and is collected in a receptacle just under the press. It has been found that when an iron frame has been substituted for the reed bags (as practiced with seed

oils), the oil acquires a bad taste; hence the more primitive method of the bags is adhered to, the material being invariably reed, horsehair or other animal hair being objectionable as communicating a bad odor.

The first pressing, without any addition of water to the olive pulp, alone yields high-grade oil (other conditions being favorable); it is termed "olio di polpa," or pulp oil, to distinguish it from the oil obtained by subsequent pressings of the residue, which latter is termed "olio di sansa," or residue oil. The former is sometimes called virgin oil. The "sansa," or residue, on being passed through the mill again with the addition of hot water, and then pressed, yields an inferior kind of oil, though, if the residue be treated at once and before it has had time to ferment, the product might pass muster with those who do not understand the article, and particularly if freshly made. In fact, it is often sold for food purposes at a low price.

Even after this second pressing, the residue still contains a small proportion of oil. This may be obtained either by the "frullino" (mill) process, or by the chemical treatment of the sulphide of carbon; in both cases the product is only fit for soap making and other industrial uses. In the "frullino," the residue is passed through a special mill, with the addition of water; when ground sufficiently fine a stream of water is directed into the mill which sweeps away the contents, and the whole descends into a series of settling tanks disposed conveniently in succession at a lower level. In these tanks, the oil rises to the surface and is skimmed off.

The pulp oil, as it comes from the press, is sometimes called must oil. It requires no further treatment than clarification, which is best effected by passing the oil through special filters, disposed in rows one above the other, and in which the filtering medium is cotton wool, which, however, must be carded. The cotton must be frequently renewed, and can be used only once. New olive oil requires repeated filtering in order to secure perfect brightness and limpidity. When clarified it is best kept in masonry tanks, lined with hard marble, and, of course, covered over. Cool storage is essential, as too high a temperature deteriorates olive oil; hence it may be added that bottled oil should be kept in a cool place and on no account be exposed to the direct rays of the sun; otherwise it will quickly develop rancidity.

High-grade olive oil can only be obtained from perfectly sound, well-matured fruit, crushed and pressed without any delay as soon as it has been gathered. Damaged fruit, or even fruit originally sound, but which through delay in crushing it has been fermented, will produce inferior oil. Nor can a choice oil be obtained except from the fruit of certain specified varieties of the olive tree. Moreover, it is absolutely indispensable that the mill, press, bags, and utensils employed be absolutely clean, sweet, and free from the least taint or smell, for nothing will more readily acquire a bad odor or taste than olive oil if placed in contact with anything that can impart such defects.

It is only necessary to add that the condition of the olive crop depends greatly upon favorable weather during the winter, when it is approaching

maturity. Dry cold, and even a touch of frost, provided it be neither severe nor prolonged, is not injurious to the fruit; but a sharp frost ensuing upon a fall of rain or snow, when the fruit is still wet, will irretrievably ruin it. Frost-bitten olives produce a dark-colored, bad-tasting oil, and the yield is diminished.

ADULTERATED OILS.

From all that has been said, it will be readily understood that, when the coincidence of so many favorable conditions is needed, the production of olive oil of the finest quality must necessarily be restricted.

Tuscany, indeed, produces olive oil of insuperable quality; but not all the oil produced in Tuscany itself answers this description. Hence, really fine "Lucca oil" always commands a good price, while much of the olive oil sold and described as such, but not vouched for by a firm of good standing and high repute in the export trade, is, at best, a mixture of inferior Tuscan oil, with a still cheaper and more inferior growth of the Bari district in southeast Italy, if, indeed, not exclusively the latter; for, strange though it may appear, a considerable quantity of olive oil is brought every year from Bari to Leghorn, Lucca, and other markets in Tuscany, and much of it is reexported under the guise of "Lucca oil." Hence it is that some brands are sold cheaper than genuine and high-grade "Lucca oil" can possibly be. When prices are cut, then follows the inevitable, *i. e.*, the quality is made to suffer.

It is necessary to emphasize this question of quality in respect to olive oil, since false notions are very prevalent and the only consideration with some would seem to be its purity. The two should be conjoined, and if there be quality, revealed by the palate and sense of smell, then indeed purity may be absolutely relied upon and assumed. But purity alone in an eating oil will not suffice; considerably more is required and should be insisted upon by consumers, *viz.*, really fine quality. Olive oil may be strictly pure, *i. e.*, free from any and every adulterant, but at the same time it may be of a vile quality, rank, and nauseous to the taste, and, perhaps, also ill smelling. A large quantity of such inferior olive oil is produced in Italy, as well as in other countries; it is a cheap article and in abundant supply, while olive oil of fine quality is comparatively scarce and dear.

Undoubtedly, there is much adulteration of olive oil with seed oil, chiefly cotton seed, as being the cheapest of all. When even common olive oil, by certain buyers is thought too dear, then a step lower leads to the adulteration of common olive oil with seed oil. But the test of quality—the palate and smell—is also the test of purity of an olive oil intended for the table. It does not pay to adulterate fine Lucca oil, for the quality would be ruined and the mixture would acquire the taste of the cotton-seed oil or other adulterant, as far removed from that of fine Lucca oil as, in fact, sweet cream is from rank tallow. This will explain what is an undeniable fact—that no really fine Lucca oil is ever, under any circumstances, anything but strictly pure olive oil. It is only a total ignorance of the subject that could lead

anyone to sustain the contrary. The cheapest kind of olive oil (common olive oil) is the only kind that is ever adulterated, its original quality being so bad that any further deterioration becomes a matter of impossibility. Common oil is in large supply. Italy alone produces on an average about 90,000,000 gallons of olive oil a year; of this a great proportion is common, or at least very inferior oil. But even as such its value is nearly double that of seed oil, and hence adulteration is resorted to. But consumers may rest satisfied that reputed brands of Lucca oil, guaranteed by responsible and reputable firms in the trade in Tuscany, are absolutely pure olive oil.

In this connection, it may be observed that a practice prevails to a considerable extent of passing off on the public fictitious brands of oil, by which is meant a brand bearing the name of a firm which has no real existence but is purely imaginary. If packed abroad, the packer is sure to be some petty obscure firm, for no firm of good standing will sink its name and reputation in this way and appear under a false name. But it may, possibly, even be a scheme entirely concocted in the United States. The system is nothing else than a sham and fraud upon the public, and deserves not only exposure but should be wiped out. It has its origin in the desire of certain dealers or jobbers to have a brand of their own, which they alone can handle and control, and thereby enable them to make an extra profit. The endeavor is invariably made to humbug the public into the belief that such particular brand is something choice, grown and packed exclusively for the firm in question, but the whole thing, in reality, is a delusion.

Regarding the adulteration of olive oil and the scientific methods by which the same can be detected, I acknowledge my thanks to the firm of Messrs. Samuel Rae & Co., of this city, for a copy of a printed report dealing fully with the subject, which embodies the results of investigations made solely on behalf of the said firm by Professor Cannizzaro, vice-president of the Italian Senate, and Dr. G. Fabris, of the Italian customs' analytical bureau. It is hardly necessary to add that Professor Cannizzaro is universally known as one of the leading scientists of the age in the domain of chemical research, and, therefore, that the conclusions to which he has subscribed may be accepted with confidence.

The crop of 1894-95 has been quite a failure in Tuscany; but, notwithstanding this circumstance, and also that throughout Italy the yield of olive oil fit for food purposes has been very much below the average, prices this year have remained low, the advance compared with last year, when there was a full crop and very low values, not exceeding 12 per cent.

EXPORT.

Exports hence to the United States are steadily increasing, commanding the significant aggregate value of about \$300,000 per annum, which is nearly one-third of the entire yearly output from this consular district to all countries. This may be attributed to the gradual popularity which the Tuscan product is obtaining in America for food purposes in contradistinction to that

of the lower grades produced in other localities, and as distinguished from common olive oil suitable only for industrial uses.

In continental countries, it is, in fact, an article of daily use in one form or other; not merely for salads, but also in the preparation of a variety of dishes of vegetables, frying fish, etc. The prejudice against olive oil as a palatable ingredient is, like so many other innate ones, only to be overcome by time. That it is only a prejudice and nothing else, may be suspected from the circumstance that very few Americans, while abroad, object to using it. In fact, fine olive oil is not only palatable and nutritious, but a healthy article of diet, and I plainly foresee a brilliant future for its growing demand and use in every American household.

ALEX. S. ROSENTHAL,

Consul.

LEGHORN, *July 22, 1895.*

THE SULPHUR INDUSTRY OF SICILY.

The deplorable condition of the sulphur industry (one of the most important) in Sicily—that is, the overproduction and consequently extremely low prices—from which the people of this country have been suffering for years, has by no means been improving, but the reverse seems to be the case, notwithstanding the untiring efforts on the part of those most interested—the mine owners, operators, speculators, and exporters.

Numerous conferences have been held in Palermo, Messina, Catania, and other places for the purpose of devising remedies to ameliorate the situation. As I reported before, various means were discussed; but up to now, they have not been able to solve the problem. At a recent meeting in Palermo, on the 10th and 11th of this month, it was resolved to form a “consorzio” (a general partnership or union) of all the mines in Sicily, the administration council to have the authority to divide the various mines into certain categories, according to the importance of each, and taking into consideration the ones worked with machinery. This council is to regulate the conveyance of sulphur to the seaports, and there to establish general warehouses and assign to each mine the quantity permitted to be conveyed to the ports’ warehouses during the specified time.

The overproduction can not well be reduced, for obvious reasons. Mines can not, without serious loss, be left standing unworked, because in most of them the rapidly entering water has constantly to be pumped out, otherwise it would soon fill and ruin the mines, especially those which are worked in a primitive mode (where the sulphur is carried to the surface in bags by men and boys over stairs crudely hewn into the walls of the passages leading out of the mines), or would cause such damage as would require perhaps six months or more (depending, of course, upon the condition of the mine) to reopen and again put in a workable condition; it would ruin the larger mines which contain costly machinery.

Further, the great need of money among most of the mine owners would incite them to work the more should a number of mines be left idle, as would certainly be the case in our cotton-raising district under similar circumstances. Yet, I am informed that during the past few years a number of small mines which had been opened out in consequence of the rise in prices during 1890 and 1891, have been closed.

As to the establishment of the "magazine generale" (general deposit warehouses) at the seaports, where certificates for actual deposits of sulphur should be issued, and such certificates would be discounted by the banks, as well as a reduction on the export duty to be granted by the Government on all deposits, a special delegation was sent to Rome at the beginning of June last to lay the matter before the Italian Government, and to ask the authorization of constructing said warehouses, with the necessary privileges and reduction of export duty (which is \$2.12 per ton), and request immediate action, considering the great financial distress from which Sicily has so long suffered. As there was much disagreement, the various localities having special interest at stake antagonistic to each other, the Government has not as yet done anything, awaiting the different factions to come to an understanding among themselves first. As soon as Parliament meets, either the latter part of this or the beginning of next month, this question will doubtless be one of the first to be discussed.

What the outcome will be is as yet difficult to foresee, although it is conceded by some that the establishment of the general warehouses with the attached privileges would, in a measure at least, stop overcrowding the market and help the depositors financially, especially if the resolutions adopted in Palermo on the 11th instant are carried out.

But to make matters worse, another dark cloud has risen above the Sicilian horizon—the late report of a recently developed rich sulphur mine in the United States. A few days ago, a Catania sulphur mine owner and refiner called at this consulate and handed me a clipping of the *Cleveland World* of October 11, 1895, and also one from a New York paper of the same date, both giving a description of a newly opened sulphur mine near Lake Charles, in Calcasieu Parish, Louisiana, of which Mr. Rockefeller, Mr. Robert P. Porter, Mr. F. B. Squire and others are said to be the owners and operators. Several other Sicilian firms have also received this information from American friends, and although it has been known that undeveloped deposits of sulphur exist in several parts of the United States, the report referred to, stating that the deposits in that locality are inexhaustible and the quality superior to that of the Sicilian product, and owing to its close proximity to both railroad and seaboard, as well as on account of the employment of the most modern machinery, and backed by a syndicate with unlimited capital, they would not only make America independent of the Sicilian product, but in all probability the American sulphur would, in time, drive the Sicilian product out of the European market, has caused quite an uneasiness among those interested in the Sicilian sulphur industry, whom this news has reached.

The clipping referred to, had been sent to the Catania gentleman by a leading exporting house in Messina, with a request that it be returned. As I could not give any positive information in regard to this sulphur deposit, although the locality is otherwise known to me, the gentleman has addressed a letter of inquiry to the Italian consul at New Orleans.

I repeat here incidentally a statement made in a former report that by far the greatest portion of sulphur is exported from Licata and Girgenti, comparatively little from Catania (and this mostly refined or ground, as mills and refineries, with the exception of one, I believe, in Palermo, are only in Catania), owing to the closer proximity of the mines to the former ports; hence there is less transportation expense to the seaboard, and consequently the prices at Licata and Girgenti are always lower than at Catania.

With the continued fall in the prices of sulphur, since 1891 especially, the wages of the poor mine laborers have necessarily been correspondingly reduced, until, as I have been informed, the hard-working men and boys do not earn, on an average, more than 7 to 8 cents, and at most 10 cents, per day.

I give below the average prices per ton realized in Sicily for sulphur known as "best thirds unmixed," during the last quarter century:

Year.	Price.	Year.	Price.
	<i>Lire.</i>		<i>Lire.</i>
1870.....	120. 86	1883.....	95. 00
1871.....	128. 56	1884.....	89. 00
1872.....	126. 64	1885.....	83. 00
1873.....	126. 40	1886.....	76. 20
1874.....	142. 17	1887.....	69. 80
1875.....	141. 64	1888.....	66. 80
1876.....	120. 00	1889.....	67. 50
1877.....	100. 50	1890.....	77. 99
1878.....	99. 20	1891.....	115. 59
1879.....	97. 41	1892.....	95. 17
1880.....	100. 35	1893.....	71. 80
1881.....	115. 30	1894.....	62. 50
1882.....	105. 00	1895.....	55. 00

As the value of the depreciated Italian currency has varied very much during the period, even during the last two years rising from 83 to 96, and is now only about 92, I have quoted the prices obtained in Italian lire (the standard lira=19.3 cents). These prices are free on board vessel, but without export tax.

Owing to the primitive furnaces still in use at the mines, the fusing of sulphur can not be done except at certain times of the year (except at the modern works in Catania), after harvesting of crops, which would be ruined by the fumes. This operation begins generally after the end of June, hence with the end of June also closes the so-called, "sulphur year," and I give below a table showing the quantities of sulphur deposited at the mines

or at the ports, over and above the quantity exported, for the past sixteen years :

At end of June—	Quantity.	At end of June—	Quantity.
	<i>Tons.</i>		<i>Tons.</i>
1880.....	88,385	1888.....	117,231
1881.....	100,000	1889.....	88,769
1882.....	143,231	1890.....	57,923
1883.....	143,692	1891.....	65,385
1884.....	74,615	1892.....	65,615
1885.....	106,923	1893.....	85,385
1886.....	121,923	1894.....	138,077
1887.....	132,615	1895.....	163,000

LOUIS H. BRÜHL,
Consul.

CATANIA, *November 14, 1895.*

THE PORT OF NANTES.

It may not be without interest and profit to shipowners, ship brokers, navigation companies, and the commercial public of the United States in general to call their attention to the improved condition of navigation of the River Loire from St. Nazaire to Nantes and the consequent increase in the commercial activity of the latter port.

NAVIGATION IMPEDIMENTS.

For a quarter of a century or more, the port of Nantes has seen her external commercial relations diminish year by year on account of the difficulties encountered in navigation of the river. The constant decline in shipping interests carried with it its indirect influence to all branches of trade and all industries. This unfortunate situation became more and more visible, more and more intense, with the gradual and ever-increasing transfer of foreign trade from small sailing vessels to steamers of heavier tonnage, which were unable to come up the river on account of the little depth of water and the often changing sands in some portions of the river. The Chamber of Commerce of Nantes became uneasy and began to study seriously the means of arresting this disquieting state of affairs. To check the continual decrease in shipping interests, to restore confidence in the future and finally to bring back to Nantes her former activity and commercial importance, it was deemed necessary that a waterway open throughout the year to vessels of heavy tonnage should be secured. To obtain such a result, it was found to be indispensable to construct a ship canal across a bend in the river from a deep-water channel a few miles below Nantes to another deep channel near Paimboeuf, and thus avoid the low water and ever-changing sands which are so very detrimental to navigation on that portion of the river comprised between LePellerina and Paimboeuf.

MARITIME CANAL OF THE LOWER LOIRE.

By virtue of a law passed on the 8th of August, 1879, a canal to take the place, for heavy navigation, of that section of the river comprised between the extremity of the dikes (*à la Martinière*) and Paimboeuf, that section in which are found the highest banks, and channels the most difficult to keep open, was declared to be of public utility. Work was commenced thereon in the year 1882, and on the 1st of September, 1892, after ten years' labor, it was delivered over to navigation, and was definitely completed the following year.

Let us now look at the work and the results obtained.

The canal proper is 15,064 meters (16,478 yards) in length and is closed at each extremity by locks of the following dimensions: Entrance, 59 feet; length, 328 feet; width, 122 feet. In close proximity to each of these locks there is a basin 350 meters in length by 150 meters in width (1,146 feet long by 491 feet wide) which permits the waiting and passing of vessels.

The width of the canal at water level is 180 feet, and the floor or bottom width 90 feet, just one-half of the water-level width. At a point one-third of the distance from each end of the canal there are docks to permit the passage of meeting vessels. On each side of the canal there is a towpath, made solidly of broken and roller pressed stone; there are also, on each side, numerous stocks for embarking or disembarking of animals or agricultural products.

WORKING OF THE CANAL.

Since the opening of the canal on the 1st of September, 1892, to the 15th of June, 1895, the operations are represented by the following figures:

Year.	Number of vessels.	Registered tonnage.
1892 (4 months).....	123	39,090
1893.....	595	206,313
1894.....	641	249,554
1895 (5½ months).....	346	156,207
Total.....	1,705	651,164

These figures show a constant and uninterrupted increase from the date of inauguration up to the present time. The month of June alone of the present year shows the passage through the canal of 82 vessels, having an official tonnage of 36,838 tons, which is an increase of over 15,000 tons as compared with the same month of last year. The entire year will certainly make a showing of considerably over 300,000 tons. As seen above, the amount for 1894 was 249,554 tons.

The figures given in the following table, covering the same period of time and the same commerce, but relating to the depth of water, will show

the draft of vessels passing through the canal to be constantly on the increase :

Draft of vessels.	Number of vessels.				Total.
	1892.*	1893.	1894.	1895.†	
5.8 meters (19 feet).....	123	591	634	336	1,684
5.8 to 6 meters (19 feet to 19 feet 6 inches).....		1	2	4	7
6 to 6.2 meters (19 feet 6 inches to 20 feet 3 inches).....		3	3	2	8
6.2 to 6.45 meters (20 feet 3 inches to 21 feet).....			2	4	6
Total.....	123	595	641	346	1,705

* 4 months.

† 5½ months.

Following is the classification of this same commerce from the point of view of tonnage :

Tonnage of vessels.	1892.*	1893.	1894.	1895.†	Total.
500 tons or less.....	113	483	480	242	1,318
500 to 800 tons.....	8	89	123	66	286
800 to 1,000 tons.....	2	9	14	18	43
1,000 to 1,200 tons.....		8	20	7	25
1,200 to 1,500 tons.....		4	9	7	20
Over 1,500 tons.....		2	5	6	13
Total.....	123	595	641	346	1,705

* 4 months.

† 5½ months.

Although the canal, in its normal state, is supposed to furnish largely 6 meters of depth, we have seen that a vessel drawing 6.45 meters (21 feet) has successfully passed and with the aid of water borrowed from the feeder (*l'achenean*), the level can be raised to permit during a full tide the passage of vessels drawing 24 feet 6 inches.

The largest vessel that has passed through the canal up to the present time is the *Basuto*, which arrived with cargo quite recently. She is a vessel of 1,764 tons burden.

The *Erie J. Ray*, of New York, is now in port. She draws 20 feet of water, and came up to dock with her entire cargo and without the slightest difficulty. She is the first and only vessel flying the flag of the United States which we have seen at Nantes during the past five years ; this should not be, and with increased facilities of river navigation, I trust, will not be so long. With the river well open, I see no reason why Nantes should not be in direct touch with United States shipping interests.

If the canal has given satisfaction as regards depth of water, and in its quick, easy, general working, the channel above the canal, between Le Pellerin and Nantes, is less satisfactory. Dredging, however, has produced an undisputed amelioration in point of view of access to the port of Nantes. During the past two years, with very rudimentary machinery, the depth of the channel has been increased nearly 4 feet, and with the more powerful drags which it is proposed to put at work at once there is no doubt but we

will have entire satisfaction on this score also. The following table will give an idea of the results obtained by dredging the two years from July, 1892, to July, 1894.

Draft of vessels.	Number of days.			
	1891.	1892.	1893.	1894.
9 feet 8 inches to 11 feet 3 inches.....	16			
11 feet 3 inches to 13 feet.....	92	88		
13 feet to 14 feet 8 inches.....	94	76	36	5
14 feet 8 inches to 16 feet 3 inches.....	123	109	91	36
16 feet 3 inches to 17 feet 9 inches.....	40	90	126	79
17 feet 9 inches to 19 feet 6 inches.....		3	99	232
Over 19 feet 6 inches.....			3	13

If it has been easier than at first anticipated to obtain a depth of 18 feet at low tide and still water, it has unfortunately been more difficult to maintain this result at all times of the year and under all circumstances. The means at the disposal of the engineers have proved to be insufficient to remove promptly the sand bars which may be formed by floods or ice; thus during the past winter, during the month of February the river was closed to navigation nearly two weeks by ice. This happens rarely in this mild climate; it is not more than once in ten years that the Loire freezes at Nantes, and the rarity of the occurrence is something of an excuse for not having always on hand good and reliable ice-breaking machinery. After the breaking up of the ice this past winter, the channel was inaccessible to vessels drawing more than 16 feet of water for several days, owing to defective dredging machinery. This unfortunate circumstance has proved however to be a salutary lesson, as the Chamber of Commerce of Nantes, in conjunction with the Ministry of Public Works, has taken steps to procure at once the appliances necessary to keep the channel always open with a good 20 feet draft of water.

From the preceding tables, we have seen that notwithstanding unfavorable circumstances, and the crisis which reigned quite generally for some time in maritime commerce, the transit by the canal has given from the start an increased activity which seems destined to make of Nantes one of the principal ports of France. One more important indication of the constantly increasing prosperity of the port is to be found in the traffic by steam vessels and the continually increasing tonnage of the same. This movement during the past four years will be found in the following table:

Year.	Number of steamers.	Registered tonnage.	Average tonnage.
1891.....	1,112	255,385	230
1892.....	1,129	271,367	241
1893.....	1,194	293,529	245
1894.....	1,276	364,997	286
Augmentation.....	164	109,602	56

Here we have an increase in four years of 43 per cent in the total yearly tonnage by steam, and an increase of 24 per cent in the average tonnage—that is to say, an increase of 24 per cent in the size of the vessels which arrive at the port of Nantes, thanks to the completion of the canal.

The authorities are doing all in their power, and with every chance of success, to make Nantes a port of easy access at all times of the year and at all tides to vessels drawing not more than 20 or 21 feet of water. Ship-owners and steamship companies follow in the movement and show an increase of business in comparison to the increased facilities of navigation. Of the several regular lines serving Nantes I might mention:

Cheviotte Bros. (Nantes, Brest, St. Malo, and Dunkirk) in the year 1893 made, with seven vessels, six voyages per month; in 1894, seven voyages per month with six vessels.

P. & A. Legal (Nantes, Bordeaux, and Bayonne), with five vessels, made in 1894 one hundred and one voyages.

L. Flornoy & Son (Nantes and Bordeaux), made eighty-five voyages with five vessels.

Hutchinson, an English company (Nantes, Glasgow, and Dublin), with eight vessels made forty-nine voyages in 1894 against seven vessels and forty-two voyages in 1893.

A. Depp, a Belgian company (Nantes to Antwerp), with three vessels made thirty-nine voyages in 1894, and the year preceding they made only twenty-eight voyages.

Bossut Plichon Company, of Dunkirk, made fifteen voyages with three vessels, the same as in the preceding year.

During the year 1894, there was established an important regular line, called the Société Navale de l'Ouest, giving regular service with Belgium, Spain, Portugal, and the Mediterranean. Five vessels made twelve voyages. This company, I am told, proposes to develop their affairs to a great extent. This present year a further increased activity is foreseen for all of the above-mentioned companies.

Quite recently, another new steamship line has been added to the list, furnishing regular service with Stockholm and Christiania. This company commences with three vessels.

The natural result of an increased activity in shipping interests has been to stimulate shipbuilding. All the shipyards have more or less felt the effects of the present encouraging situation. During the year 1894, there were launched from the various shipbuilding yards of Nantes four vessels of over 1,500 tons register, including one second-class iron cruiser of 3,000 tons. Besides these, there have been built twenty or twenty-five vessels of all dimensions, from 500 tons downwards. The total registered tonnage of vessels constructed during the year 1894, was 11,881 against 5,754 in 1893—an increase of 6,127 tons, or more than double. Thus it will be seen that shipbuilding follows in line, and that the boom is quite general and likely to be durable, seeing the conditions under which it is being developed.

During the year 1894, there arrived at Nantes direct from Peru, loaded with guano the *Ariel*, drawing 19 feet 6 inches, and having a cargo of 1,400 tons; the *Chittagong*, drawing 19 feet 10 inches, with a cargo of 1,600 tons, and the *Western Monarch*, drawing 21 feet 2 inches, with a cargo of 2,000 tons. Before 1893, previous to the opening of the canal, not one of the above-named vessels could have come to Nantes direct without partially unloading at St. Nazaire; in fact, before the construction of the canal, all guano steamers, without exception, unloaded at St. Nazaire; in future, the delay and expense of discharging at St. Nazaire will be avoided owing to the increased facilities of river navigation. From Chile, during the year 1894, there came direct to Nantes two vessels loaded with nitrate of soda; it would have been impossible for these to come up the river before the construction of the canal; in fact, the completion of the canal and the deepening of the river channel are the deciding reasons for the creation of a nitrate depot at Nantes where the demands of the neighborhood may reach the amount of 7,000 to 8,000 tons yearly, an industry created and being developed, thanks to easy navigation.

GENERAL INDUSTRIES OF NANTES.

Alongside of shipping interests, we find mills, manufactories, and the various industries of the city stimulated by the general impulse; the prosperity of the one aids the prosperity of its neighbor, and all derive their profits from one cause—river navigation.

The Gourand Paper Manufacturing Company, which, in 1891, imported 20,000 tons of wood for the manufacture of paper, imports to-day from 50,000 to 60,000 tons, and intends next year to import 70,000 tons.

There are many other old industries and manufactories which are shaking off the dust of stagnation of the past few years and are preparing to enter the arena of commercial activity with renewed vigor, but it may be useless to prolong the list, my object being only to call attention to the general revival of activity of this port. I will, however, mention the construction of an important flouring mill which will approach completion next month. The proprietor writes that he expects to import 100,000 tons of wheat this year, and when his mills are in full working order he expects to consume 500 tons of wheat per day. The Blanzv Ovest Coal Company, to keep up with the demands of commerce, has quite recently changed its location, and has placed itself in a position to double or triple its importations of coal from England.

AN AMERICAN SHIP CAPTAIN'S OPINION.

At the moment of sailing for the United States, the captain of the bark *Erie J. Ray*, sent me a letter of which the following is a copy :

NANTES, July 23, 1895.

MR. H. D. BENNETT,

United States Vice-Consul, Nantes.

SIR: In confirmation, and in a manner to emphasize our conversation of this morning, I beg to state that the bark *Erie J. Ray*, of New York, drawing 20 feet of water, passed through

No. 186—5.

the maritime canal of the Loire without once touching, and that I came up to dock at Nantes with my entire cargo, and with no difficulty. It gives me pleasure to testify to the satisfactory condition of the canal and the navigation of the river, so far as I am able to judge.

Respectfully yours,

H. S. RAY,
Master Bark Erie J. Ray.

Through the kindness of Mr. Schwob, editor and proprietor of the *Phare de la Loire*, I am able to send a bird's-eye view of the canal and two maps, all three on the same sheet. Map No. 1 shows the Loire from Nantes to St. Nazaire; No. 2 shows the Loire from Nantes to the entrance to the canal.*

H. D. BENNETT,
Vice-Consul.

NANTES, *July 29, 1895.*

COCOANUT TRADE OF COLOMBIA.

Since the present tariff of the United States went into effect, with its new duty of 20 per cent on cocoanuts, there has been a noticeable fluctuation in the shipment of this article of commerce from this port. Cartagena is in the very center of the best cocoanut-growing district on the coast, and from the facility with which nuts are produced in this district, the small amount of capital and labor attached to their successful cultivation, together with the large profits accruing therefrom, this should be and has been an increasing article of export. Up to the present, cocoanut exportation has been directed almost exclusively to the markets of the United States. Now, however, that a duty of 20 per cent has been placed on them, there has been a perceptible decrease in the number of nuts shipped from here, at the same time that an incipient effort is manifest on the part of some native merchants to find for this valuable staple a European market. In this connection, the following table of yearly cocoanut shipments from this port is instructive:

Year.	To United States.	To Europe.
	<i>Kilograms.</i>	<i>Kilograms.</i>
1890.....	536,159	.....
1891.....	1,405,600	.....
1892.....	2,382,197	.....
1893.....	3,356,032	21,264
1894.....	2,808,493	153,455
1895 (to August 1).....	272,524	79,130

So far, as nearly as I can judge from what the merchants here tell me, the European market is purely speculative. At present, there is not a sufficient amount of practical experience derived from the results of European shipments upon which to base any permanent conclusions. It may be presumed, however, that there is neither so large nor so staple a market there

* Filed in the Bureau of Statistics, Department of State.

as in the United States. Doubtless this is due to the greater number of uses to which we have learned to put the cocoanut than is the case so far with transatlantic consumers.

The most promising European market for Cartagena cocoanuts, as far as I can learn, is to be found in Hamburg. Here the price offered is from \$2 to \$3.50 per hundred, according to the size and quality of the fruit, as well as to the quantity already in the market. I am informed, also, that there are other considerations besides a better market value that would seem for the moment to make Hamburg preferable to some of our own ports for cocoanuts.

Thus, shippers complain that there is more loss to them in New York and New Orleans on account of so-called "bad nuts" than in Hamburg. In the latter city the commission merchants are much less exacting than with us, and as a rule buy all the nuts shipped at a uniform price. This is not true of New York however. There, so I am told, out of 40,000 common nuts, about 20,000 on an average are lost altogether to the original shipper. Of the remainder, about 15,000 will bring half price, leaving only 5,000 that sell at the first price. In New Orleans, the loss is not so great. There, out of the same number shipped not more than 3,000 would be lost, while the remainder would sell at a uniform market price, which varies from \$16 to \$18, and sometimes even as high as \$24 per thousand. In New York, the market price is always higher than in New Orleans.

In regard to the freight charges between Cartagena and New Orleans, and Cartagena and Hamburg, I am told that it is \$4 to New Orleans and \$8 to Hamburg per thousand.

One chief cause for the loss of cocoanuts after shipment from here to the United States is, as I am informed, the dishonesty of the sailors on board the steamers. The steamship agents in Cartagena compel merchants to ship cocoanuts on their own responsibility, the agents holding themselves responsible simply for the number of bags carried by their vessels and not for the number of cocoanuts. As a consequence, sailors have frequently been known to unsew the bags while in the hold of the ship and abstract a good portion of the nuts for their own profit. Thus the bags are frequently found to be only half full on arrival at their destination. But if the number of bags tallies with the number originally shipped, according to the conditions agreed upon by the shipper and the agent, no one is responsible for any diminution in the weight of the bags themselves. This disadvantage to the shipper does not exist when sending cocoanuts to Hamburg.

Practically, the New York market for Cartagena is restricted to the San Blas cocoanut. This is the highest grade cocoanut produced in Colombia. It is exclusively owned and cultivated by an independent tribe of Indians, who occupy a narrow strip of coast territory lying between this port and Colon. Coasting vessels trade with these Indians and buy their cocoanuts at an average net price of \$8 per thousand, United States currency, the total cost landed in New York averaging from \$12 to \$14 per thousand.

In New York, these nuts sometimes sell for \$35, and even more, per thousand, making, of course, a most profitable business for the traders, although, strangely enough, the number of the latter seems to have fallen off recently and to such an extent that the Indians sometimes complain that the cocoanuts are spoiling on their hands. In New Orleans, there is no discrimination in favor of the San Blas nuts, and I am not aware that any of the latter have ever been shipped to a European port.

From a comparison of the figures contained in the foregoing, it will readily be seen that even taking into consideration our duty of 20 per cent, the relative advantage of the Hamburg market over that of New Orleans for cocoanuts is not altogether obvious. Of course, a slightly better price is offered in the former city, but this price is fluctuating, and it is quite certain that large and continued shipments would bring it down to a minimum standard. The higher rate of freight to the European port also is hardly offset by our tariff duty. The main disadvantage of shipping to New Orleans and New York appears to be in what has been said of the greater average loss of cocoanuts between here and the United States over the corresponding loss between here and Europe. This is a disadvantage that, it would seem, might easily be corrected. If it were corrected, our new customs tariff, which now appears a burden to the shipper, could more easily be borne.

Except for the existence of these temporary exactions and disadvantages, it would not be difficult to foresee a great commercial future for Colombia in the exportation of this single natural product. In the past, there has been really very little done, compared with what might profitably be done, to cultivate cocoanuts here. There is no climate better suited than this for the successful production of the latter, and as desirable land is cheap and abundant the small number of planters is the more remarkable.

I believe it was Chateaubriand who once said in illustration of the ease with which cocoanuts might be cultivated, that if a cocoanut were thrown on a barren rock in the ocean and left there for a dozen years, the original planter, upon his return, would find a thriving cocoanut grove where before there was not sufficient soil to support the commonest weeds. Be this as it may, the testimony of such planters as I have met here united in describing the cocoanut as being a most hardy fruit, and one, too, that returns a speedy and ample profit for a very small original outlay of capital.

In corroboration of this statement, I have lately talked with the owner of the largest cocoanut plantation on the coast. He tells me that the monthly output from his farm is approximately one hundred thousand nuts, each tree yielding between fifty and one hundred nuts annually. His land extends 3 miles along the shore and $3\frac{1}{2}$ miles inland. The trees planted directly on the coast prove to be the most successful. These bear in five years after planting, while those planted further inland take from ten to twelve years before producing fruit, and then their average yield is considerably less than that of the coast trees. All these trees will bear fruit for at

least forty years. The only difficulty this planter has ever had to contend with is during the first year after planting the nut. In this period, he is troubled with a species of black fly that goes down into the earth, bores a hole into the buried nut, and thence works its way through the middle of the young plant to its top. This parasite is, of course, fatal to the growing plant; but I am told that with ordinary care its ravages are easily checked, and after the first year it is no longer to be feared, as the tree is then strong enough to withstand the encroachments of the most insidious parasites.

As regards the profits to be derived from such a farm as I have described, I am told that, under the most adverse circumstances, the smallest annual net income averages 50 cents gold per tree. This is allowing \$1 per tree to cover all expenses of planting, cultivation, maintenance of farm, transportation, duties, etc., which, considering the cheapness of labor and the few requirements for maintaining this kind of plantation, is certainly a generous allowance. But even at this conservative estimate, the ample and certain profits to be gained from cocoanut cultivation in Colombia may be readily appreciated, and, compared with other agricultural industries here, will be seen to be perhaps the safest and most remunerative, especially for the small capitalist.

CLIFFORD SMYTH,

Consul.

CARTAGENA, *October 26, 1895.*

URUGUAYAN-AMERICAN COMMERCIAL RELATIONS.

I have the honor to inclose a clipping from the Siglo, a leading newspaper of this country, and a translation thereof. As will be seen by this article, the people here are anxious to get into closer relations with the United States, so that it now depends only upon the action of our own people to secure these River Plate markets for our manufactures.

EDGAR SCHRAMM,

Consul.

MONTEVIDEO, *August 31, 1895.*

COMMERCIAL RELATIONS BETWEEN THE REPUBLIC OF URUGUAY AND THE UNITED STATES.

Some days ago appeared the advance sheets, published by the direction of general statistics giving important data, which will appear in the Anuario corresponding to the year 1894.

Glancing over those data relative to our foreign commerce, the attention is attracted by the increase shown by our exports to the United States. According to the statistical figures referred to, compiled with the greatest care, the Republic of Uruguay has exported to the

United States during the past year the value of \$1,900,241, against \$1,431,618 in 1893, showing an increase of \$468,623 for 1894. This took place before the United States Government issued the law regarding the free introduction of South American wools, and, as was to be expected, since this resolution a new increase has taken place, not only as to wools but also in other articles, according to information obtained from the consulate of the United States in the competent hands of Mr. Edgar Schramm.

From the tables compiled by said consul, the exports from the port of Montevideo to the United States during the fiscal year (July 1, 1894, to June 30, 1895), have reached \$3,075,836, showing \$1,175,591 more than in the calendar year 1894, according to our anuario of statistics. This sum, at the same time, shows a difference of nearly double in comparison with the imports from the United States in Uruguay, which amount to \$1,687,878.

Mr. Schramm informs us that the fiscal year, which commenced July 1, will probably show a still more important increase, based upon the advantages offered by the law referred to. We, on our part, can supply in this connection another point which is highly favorable to the interests of Uruguay, namely, that there have already been received here from the United States large orders for wool of the new clip.

The benefit derived by the Republic of Uruguay from the application of the law mentioned before is known by everybody, and is furthermore fully proven by the eloquent fact that our commerce in wools with the United States has nearly tripled.

It is therefore advisable to have the provisions of this law continue, taking into account that the President of the United States has power to modify the same or suspend it in regard to any of the countries reached by its effects. For this purpose it would be well for the Government of Uruguay, on its part, to secure some advantages to the importation of North American products, which this country has to obtain from outside. This would be the most practical means to foster the commercial relations which promise such a great benefit to the American nations referred to.

THE PROPOSED HARBOR WORK OF MONTEVIDEO.

In a previous report, I have demonstrated the importance of Montevideo, destined to become the best distributing port on the South Atlantic, as soon as proper facilities for the safe and prompt dispatch of vessels of all sizes will have been created. There is no doubt that if ever a deep-water harbor at Montevideo is to become a fact, it will have to be done by foreign enterprise and foreign capital, protected by special laws to be enacted by this country for this particular purpose. The readiness on the part of the Government and of the people of the Republic of Uruguay to afford this protection has been sufficiently indicated by the actions of various former sessions of Congress, so as to leave no doubt in this respect. Thus all that remains to be shown is the paying capacity of the enterprise in itself in order to prove it to be a good and safe investment, for which, beyond any doubt, capital will not be lacking. The best proof of this is furnished by the statistics of the port of Montevideo, kindly put at my disposal by the director of the bureau of statistics of Uruguay.

The port movement of Montevideo in 1894 consisted of 2,772 steamships and 908 sailing vessels, of 5,455,665 tons register, entering from and clearing for foreign ports, and 1,783 steamships and 3,122 sailing vessels in the

river trade of 1,140,826 tons register, giving a total of 8,585 vessels of 6,596,491 tons, or an average per day of 24 vessels of 18,073 tons.

The merchandise brought and taken by these vessels for and from Montevideo is officially stated at 1,198,323 tons, against 1,068,624 tons in 1893, 1,009,511 tons in 1892, 1,089,992 tons in 1891, 1,316,296 tons in 1890, 1,773,610 tons in 1889, 1,411,686 tons in 1888, and 1,187,557 tons in 1887, thus showing for these eight years an average of 1,256,000 tons per year.

Besides the insignificant fee of \$4 on each vessel clearing for a foreign port, and \$1 on each vessel going to a river port, and likewise insignificant charges for opening and closing the custom-house register, there exist at Montevideo no official port charges, with the exception of light-house dues amounting to $6\frac{3}{4}$ cents per register ton for all vessels destined for Uruguayan ports, and $8\frac{3}{4}$ cents per ton for vessels proceeding from here to Argentine ports.

The real shipping drawback in this port consists in the fact that no vessel can land or ship her cargo directly at wharves, everything having to be carried in lighters, and this is not only a heavy pecuniary burden but it is, at the same time, of the greatest inconvenience and risk. With a "pampero" blowing, it is not a rare occurrence to have mail steamers delayed here for days in the outer roads, and even smaller vessels in the harbor are often obliged to wait until the storm subsides to become again approachable by lighters to take off or bring their cargoes alongside. At the same time, valuable merchandise has to remain afloat in lighters more or less insufficiently equipped, exposed to damage by sea water or even total loss.

According to the rates established by the firm controlling the lighterage business, which show an average of \$1 per ton, and taking the inward and outward movement of the last eight years as a basis, we find that on an average more than \$1,250,000 have been spent each year for this service. If, therefore, this method can be supplanted by good dock and pier facilities, in a harbor affording full protection to the largest vessels, without additional burdens to the shipping and commercial interests, such a change suggests itself as a logical consequence. The dock and deep-harbor facilities once established, the lighterage expense would disappear, and in their stead corresponding port dues could be charged by the Government. These would gladly be paid, as the risks and inconveniences connected with lightering the goods from and to the vessels would no longer exist, marine insurance would consequently be cheaper, and the loading and discharging operations would be materially quickened.

Let us now pass to a calculation of the profitableness of the enterprise. The capital required to give Montevideo the desired port facilities would be furnished, according to reliable estimates, by the proceeds of a Government loan of \$12,000,000, or rather, taking into consideration the interest on the expenditures as they come to be made during the time the construction will take, \$14,000,000. Without making any allowance for the increase in traffic, which with proper port facilities unquestionably will be very considerable,

we will only take the above annual average of lighterage expenses as a basis of our calculations, and we find:

Capital	\$14,000,000	
Yearly amount at disposal for interest and sinking fund service, say.....	1,250,000	
Interest, first year, at, say, 6 per cent.....	\$840,000	
Balance at disposal for sinking fund.....	400,000	
		1,250,000
Interest, second year, on \$14,000,000, less \$410,000, or \$13,590,000 at 6 per cent.....	815,400	
Balance at disposal for sinking fund.....	434,600	
		1,250,000
Interest, third year, on \$13,590,000, less \$434,600, or \$13,125,400 at 6 per cent.....	787,524	
Balance at disposal for sinking fund.....	462,476	
		1,250,000

And so on, the interest charges decreasing every year and the balance of the \$1,250,000 at disposal for sinking fund purposes increasing correspondingly, so that the loan would be paid off in a comparatively short time, as anyone can easily figure out for himself.

It will not be difficult to conceive that the nation which takes hold of this enterprise will reap the benefits, securing thereby commercial supremacy in this part of the continent.

EDGAR SCHRAMM,

MONTEVIDEO, *September 15, 1895.*

Consul.

SUGAR IN QUEENSLAND.

As the people of the United States still import for domestic consumption, in addition to domestic supply, about one-fourth of the world's product of sugar, they are naturally interested in the development of that industry and in a knowledge as to the source of their future supply. Realizing this, I have carefully gathered the available information relating to a new field, and last week I made a hurried trip to Queensland, where this industry promises an important future, to look over the country and to casually examine the details.

PHYSICAL FEATURES OF QUEENSLAND.

Queensland has a superficial area of 660,000 square miles, or over twelve times that of Iowa, and extends from the eleventh to the twenty-ninth parallel south latitude, and from about 137° to 154° east longitude. Fully one-half of this country is within the tropics, and much of the rest is semi-tropical. Paralleling the coast line, there is a range of mountains stretching from the New South Wales border north to about the seventeenth parallel and varying from 40 to 100 miles from the seacoast.

East of this range is the chief rainfall, which is extremely irregular in the whole of Australia, and east of this range also lies the sugar lands, divided into a few widely separated and distinct districts. The principal of these is

Mackay, lying chiefly between the twentieth and twenty-first parallel south, and longitude 149° east, and Bundaberg, with its center on the twenty-fifth parallel, and in longitude 152° and 153° east, the former having a mean annual rainfall of 71.51 inches, and the latter of 48.84 inches, usually from January to March. The altitude of the cane fields is usually but a few feet above sea level, and never over 200 feet, I believe.

On the lower lands, some distance from the coast, there are occasional frosts which do considerable damage to the crops. The rain usually falls in January, February, and March, which on this side of the equator means midsummer and early autumn. The mean temperature at Mackay is 72.1° F., the extreme heat being 99.5° in January, with an opposite extreme of 39.6° in July, while at Bundaberg the mean is 71.4° and the extreme 95.6° in January, down to 38.3° in midwinter. There are occasional frosts at the latter place.

As statistics of this new and sparsely settled colony are rather meager, I am chiefly indebted to the patience and courtesy of the Hon. P. McClean, Minister of Agriculture for Queensland, and G. F. Ward, editor of the Brisbane Courier, for valuable assistance in my investigations. However, I made a brief personal inspection of the cane fields, and examined the crushing mills, factories, and refineries in the Bundaberg district. By rail, this district is about 950 miles from Sydney, my consular headquarters.

The climate is healthful; the malaria and the fevers so common to most tropical countries are very uncommon in Queensland. The population is almost purely British, possessing a full share of the intelligence and enterprise of that aggressive nation.

SUGAR PRODUCTION.

So far, the production of sugar has, of course, been confined to cane, the varieties used being chiefly Rappo, or Rose Bamboo, Louzier, Striped Singapore, Striped Gingham, Meera, Elephant, Malabar, Daniel Dupont, Bourbon, Salangore, Cheribon, and some other varieties. The industry was introduced into the colony in 1862, and though at first there were some discouragements by reason of small experience, there has been a uniform increase and improvement in the production.

The following table shows the relative importance of the periods indicated. Remember, in 1862 there were but 20 acres of cane under cultivation :

Year.	Sugar cane crushed.	Sugar.	Average sugar per acre.
	<i>Acres.</i>	<i>Tons.</i>	<i>Tons.</i>
1880.....	12,306	15,564	1.37
1890.....	40,208	68,924	1.69
1891.....	36,821	51,129	1.39
1892.....	40,572	61,368	1.51
1893.....	43,670	76,146	1.74
1894.....	49,839	91,711	1.84

It will be noticed in the above table that there has not only been an increase in the area devoted to cane growing, but an encouraging increase in the sugar per acre and also the sugar per ton of cane. These results have come with greater skill in cultivation and better methods in crushing the cane and saving the juice. I have never seen anywhere better cultivated fields. I was driven all over the Bundaberg district and saw thousands of acres of cane as clean and free from weeds as the truck patches near our eastern cities. I am informed that this year there are about 55,000 acres of cane grown, and the sugar output will be fully 100,000 English tons, or an amount equal to about one-fourth the sugar cane product of the United States.

SOIL.

While Queensland has a superficial area of over 420,000,000 acres, or nearly twelve times that of Iowa, the land suitable for sugar cultivation being confined to the rather narrow strip between the east coast and the coast mountain range above described, with the further fact that the good soil is "patchy" to a degree not known in our country, reduces it to a comparatively limited area. My use of the term comparatively limited must not be taken to imply that the industry is not capable of enormous development, for it seems to me that the production of an amount equal to one-fifth of the world's supply would not exhaust the capabilities of this wonderful country. However, I find no one who is willing to even approximately estimate the possibilities of the future of this industry. That the sugar-raising area in Queensland may be easily increased eight or ten fold, I have no doubt.

For the best results, there are two kinds of soils chosen for sugar-cane culture. One is purely alluvial, rich bottom lands, usually subject to overflow, and the other is purely volcanic. The former has the advantage of retaining for a longer time its native fertility, while the other is exempt from various evils which often follow in the train of the Australian rainy seasons.

At Bundaberg, from the summit of the extinct volcano, I was shown several thousand acres of the most luxuriant and beautiful fields I had ever seen, stretching clear around the base and up the sides of that old scene of fire and terror. As far as the ash and lava covered the level plain, the soil is very fertile, but to the very edge of this, it is as sterile as a desert. This rich volcanic land is covered with an almost impenetrable jungle called "scrub," while the more ancient surface has but a thin covering of worthless wire grass and stunted, scraggy shrubs and trees. The "scrub" presents a deep green and luxuriant appearance, while the other looks pale, withered, and cheerless. The fertile soil is in spots, sometimes but a few acres and often widely separated, but it presents such marked characteristics that at a long distance one may detect the good from the poor soil. The good and poor soils do not merge to form a medium, but the lines are sharply marked, so that often a few yards' distance would take one from very fertile to very poor soil.

CLEARING AND PLANTING.

This "scrub land," or jungle, is regarded as the best soil for sugar cane, though the expense for preparing it for the first crop will average fully \$20 per acre. Even then, the land is not cleared. The method of preparing for the crop is to fell all the scrubs, trees, and undergrowth, and when a few months of hot, dry weather has had its effects, the field is set on fire and burned. This done, the cane is planted at once with hoe or spade, the joints of cane being planted much as in our Southern districts, except that they are placed deeper in the soil. The ground thus prepared is, in provincial vernacular, called the "virgin scrub." The cane thus planted is carefully cultivated with the hoe, which is called "chipping" the cane. The planting is done when the ground is ready, regardless of the season, though March and September are considered the better time for this work. As high as 90 tons of cane per acre have been raised from ground so planted, but the second and the third crops, or ratoons, are a little lighter. Usually, the ground is allowed a season's rest after two or three successive crops. On most of these lands, the roots and stumps decay rapidly, so that after a few crops are raised the plow is used for preparing and cultivating the soil. In the preparation for the crop after the ground is cleared, the plow is used and the soil is stirred to a depth of 12 to 14 inches. The plows are of English make and appear to me to be clumsy and defective. The average crop is about 30 tons per acre; however, the range is from 20 to 70 tons. So far, the planters have paid little heed to preserving the fertility of the soil, but much attention is now being given to that important matter.

SUGAR-CANE GROWERS.

The statement of the fact that upon the 100,000 acres of land devoted to sugar growing there are 1,600 cane growers would convey, to the American, the impression that as a rule the cane was grown by small farmers. This would, however, be misleading. The meaning of many terms differs in the two countries. What we would call a farmer, or "small farmer," would here be designated a peasant proprietor, and those called small farmers we would designate usually as tenants. As a fact, by far the greater portion of the sugar lands, and especially those actually planted in cane, are owned by a very small number of persons. Most of the fields are on large estates, and most of the cane is grown by hired labor under the supervision of overseers.

However, there is a tendency toward a new order of things. Low prices and sharp competition suggest improved methods and new economies. This requires a careful study for the mastery of details, and suggests concentration of energies and specialization of efforts. Thus the tendency now is to divorce cane growing from sugar making.

To obtain results at all adjusted to present prices, the highest intelligence and most careful supervision over details are necessary. It has been found by experience here that cane can be produced much more cheaply when the lands are divided into small or moderately small tracts among industrious men

who have an interest in the products and who give their own labor and personal attention to the raising of the crop, than when left in large tracts, though managed by the most trustworthy overseers. Thus, the tendency now is toward a reduction in the size of farms to tracts of from 40 to 80 acres, when good men are found who desire to become proprietors and moderate employers. In all leases or sales, there are contracts at a specified price for all the cane grown, the vendor or lessor of the estates in nearly all cases being persons or companies operating sugar manufactories. Many thousands of acres of cane land, as well as "native scrub," are in this way passing out of the hands of large holders and into the hands of frugal and industrious tenants or freeholders. The prices paid for these lands are, for "native scrub," £1 (\$4.86,6) per acre, and for cleared lands, £5 (\$24.30) per acre—varying somewhat with location—on such terms as may be agreed upon, usually reasonable to the purchaser. It is seldom, indeed, that an industrious man has failed in his payments, while in some cases persons have paid the entire price of the land from the first crop. The contract price for cane now, on present leaseholds and land sold, is about 9s. 6d. (\$2.28) per ton at the mill, and as the crop will average 30 tons per acre, it will be seen how much encouragement there is for industry and economy. On leased lands, the rent is now 1s. (24 cents) per ton for all cane raised. Of the total cost in the production of this crop, it is estimated that about five-eighths is labor. By these methods, the small farmer who works himself and guides every movement, can economize in many ways not possible where all labor and supervision is employed. The small farmer hires a few persons, black and white, and works with them, thus minimizing the labor cost. I think this will become the rule in the future.

With the fertility of Queensland soil, the exemptions from failures along the coast belt, its wonderful healthfulness for all nationalities of men, and with the consummation of this purpose to concentrate the mental efforts and physical energies, I incline to the opinion that this distant land will in the no distant future, appear among the foremost competitors for the sugar trade.

SUGAR MILLS.

The cutting and crushing season in Queensland is from August to December, inclusive. The mills are scattered at convenient points through the districts with a view of economizing transportation. From the mill, there are lines of tramways reaching out into and through the plantations and farms to receive the cane from the carts which bring it direct from the cutters. These lines run as far as 6 and 7 miles out, with various branches that leave no great distance for the carting of any part of the crop. As the fields are quite level, this tram system effects a great saving in the handling of the product. At the tram line is the point of exchange between the cane growers and mill owners.

As the market is reliable, the pay for the crop absolutely certain and the delivery easy, even at a further reduction in the price of cane, the condition

of the enterprising farmer in Queensland will be better than the same class in any portion of the world with which I am acquainted.

There are eighty-four sugar mills in the colony, twenty-two of which are exclusively crushing mills, while sixty-two are furnished with machinery and appliances both for crushing and sugar making, while one—the Milaquin mill at Bundaberg—performs the whole process and turns out a quality of refined sugar equal to the best found in any market. This mill keeps fully abreast with the times. It constantly adopts the most improved methods, and is managed by men not only of great experience but great enterprise. It has a capacity of from 8,000 to 10,000 tons per season of six months in the year, and, all in all, it is one of the most perfectly equipped sugar manufactories in the world. I am informed that the Homebush mill at Mackay has equal merits, but it is not a refinery. While most of the sugar mills are on the plantations, this one (the Milaquin) is in the city of Bundaberg and is supplied from crushing mills located in the cane fields, the juice being pumped through pipes from 2 to 7 miles, or hauled on railways in tanks much resembling the oil tanks in the United States. Conveying the juice from crushing mills in the cane centers to the factories near railway or wharf in pipes laid as we lay gas pipes, is found to be a most satisfactory and economical method. I incline to regard that as the system which will become nearly universal in the sugar districts of Queensland in the near future.

While the different branches of sugar production, the cane growing, crushing, sugar making, and refining are systematically specialized or differentiated by careful organization, they are so adjusted to demand and capacity, each to the other, that the highest intelligence may be concentrated on details and the greatest economy be secured. There is hardly a doubt that sugar is being made at Bundaberg and Mackay more cheaply than at any other point on the globe.

COST OF SUGAR PRODUCTION.

Raw sugar has been declining in price for several years, yet in Queensland, every decline in price has been followed by greater expansion and greater economy in production. When raw sugar—88—was worth £22 (\$105.60) per ton, but 60 to 70 per cent of the juice was saved, and many wastes were suffered in other branches of the process. Now, raw sugar is but £8 10s. (\$40.80) per ton, and 95 per cent of the juice is saved, with greater economies in all the other branches of the work. At present prices, sugar can be produced in Queensland at a fair profit. In fact, the aim of the producers now seems to be to bring all the inventive forces into play and all the economies to their aid, with a view of reducing cost below the prices necessarily demanded by sugar producers of other countries. There are no duties, export or import, on sugar in Queensland.

LABOR CONDITIONS.

As about five-eighths of the cost of cane, and sugar production also, is labor, the labor question in Queensland, as in other countries, is an important problem.

This question, as it relates to the sugar industry in this country, presents some unique features. Owing to a rather common notion that white men could not perform manual labor under the scorching heat of a tropical sun, and to the ease with which colored labor could be secured from the many adjacent islands, a custom of using the dark-skinned races for certain classes of work on sugar plantations has, in late years, received the sanction of law. There are now about 7,500 South Sea Islanders, called Kanakas, engaged in labor in this industry in Queensland. They are, as a whole, an excellent class of laborers. They are docile, of an amiable disposition, perfectly reliable, and, in most respects, quite satisfactory. They do what they are told to do without question, and unless checked by the presence of strangers or by having some other curiosity aroused, they work as steadily as a clock. In short, considering that they are often taken as naked savages, and even cannibals, they are remarkably intelligent, industrious, and well behaved. They are an excellent people, and as long as they are fairly well treated, with no acts that arouse their suspicion or endanger the loss of their confidence, I know of no class of people more valuable as laborers, especially in labor requiring little skill. These islanders being employed under the provisions of law, their rights are secured by a scrupulous enforcement of all the regulative provisions. Bringing them to the country is called "recruiting." This is the method: A ship secures a "license" to go on a "recruiting voyage" to certain specified islands. On the ship, there is a Government agent, connected with the Melynesian Immigration Bureau, whose sworn duty it is to guard the interests of the blacks and to see that there is freedom of contract and no imposition. All matters of business must be explained fairly; the nature of the labor, the time, wage, and all essential particulars must be understood by the contracting parties, who sign the articles of agreement in the presence of witnesses. There have been some grave violations of the laws of justice, but the severity of legal penalties and the vigilance of authority has reduced such to a minimum, if they have not abolished them.

These laborers are engaged for a term of three years, with a stipulation for a return after the expiration of the term at the option of the employee. In selecting the party, at least one in ten must be a woman. All of these immigrants are young people. The men are called "boys" and the women "Marys." In every squad taken by the cane grower, with the usual party of ten, at least one must be a "Mary." Now suppose a farmer wants a group of twenty persons, he makes application to the authorities. He then deposits say \$100 for each person to defray expenses of "recruiting," and \$25 per head more for the return at end of term. The wages, which are to be paid in the presence of the Government authorities, are \$30 per year. These wages seem low, but the first cost, it will be observed, is considerable. Then the contractor, or employer, must furnish food, shelter, clothing, and medical attention, as prescribed by parliamentary law. The health and the morals of these people are carefully guarded, and must be under legal pen-

alties. For the first year, too, unfortunately many of them are delicate, weak, awkward, and generally rather inefficient. Worse than that, the mortality among some groups of them, especially those from the Santa Cruz Islands, is often very great.

In this class of labor, the law and the custom define the work to be done, for in Australia, the labor question has given a grotesque form to industrial development. The blacks in Queensland are field hands, and they may and may not do certain things. They may "chip" (hoe) cane, fell trees, pick stone, dig stumps, "trash" (cut or handle) cane, but they can not cart supplies, plow, harrow, or even haul manure, for these are the tasks of white men. It is amusing to see a white man holding a plow, and a black man following with an old tin can picking up grubs from the furrow. These persons may laugh and talk, but, regardless of fitness for the respective toils, they can not exchange without offending the majesty of the law. These laws and rigid rules are adopted that the blacks may not be real competitors with the whites, and as the white people will only do the work when they become tenants or owners of small holdings that the blacks now do, and as the blacks are unaccustomed to the use of horses or oxen, a real competition can hardly be said to exist between the two races

However, there is much clamor among laboring men in the other colonies, which is shared by many in Queensland, against the introduction or use of Kanaka labor. I am satisfied, however, from careful inquiry that instead of white labor being injured by the presence of these South Sea Islanders, their presence has made the sugar industry a possibility, and has been the indirect means of the employment of many thousands of white men in Queensland where desolation would have reigned had the policy never been adopted. It seems certain that the introduction of every two and one-half blacks, under the present system of specialization or classification of labor, creates a demand for at least two white laborers, and correspondingly increases other branches of trade and industry.

Hitherto, the labor agitation in this country has cast some doubts on the future of the sugar industry in Queensland, but the beneficial results of the black-labor system are so manifest that it will probably meet with little more opposition, and as the tendency now is, as before remarked, toward small farming, where the labor will be performed by the freeholder or tenant and a small number of white and black hands, with the labor legally classified, the future seems safe from the danger of agitations of any great magnitude.

I regard the development of the sugar industry of Queensland as very promising, and believe that at no distant future a profitable trade will exist between that colony and the United States.

GEO. W. BELL,
Consul.

SYDNEY, August 6, 1895.

PROFESSOR ROENTGEN'S DISCOVERY IN PHOTOGRAPHY.

I have the honor to report a discovery which may profoundly affect surgery and medicine in the way of diagnosing tumors, protuberances in bones, and foreign growths in the flesh, as well as bullets or other substances in the bodies of men or animals. It is likely, also, that the discovery will in time enable us to examine the interior of tools, machinery, and other objects of wood and metal, so as to guard against danger through flaws or errors in casting.

It is the discovery of a property of certain rays emanating from the electric light when produced in receivers from which the air has been exhausted. This light is now found to possess very remarkable properties indeed, which are supposed to dwell in rays that are not visible to the eye, but are in their nature very different from the visible rays which they accompany. The discoverer is a professor at the University of Würzburg, a Hollander by birth and a Swiss by education, who has devoted his life to experiments on air, light, and electricity. His name is Wilhelm Conrad Roentgen.

With the electric light from air-exhausted receivers, Professor Roentgen has photographed through the flesh and through pasteboard and thin wood, and also through many layers of paper. Mr. Hans Schmidt, of Munich, observed last year that the invisible ultra-violet rays of the electric light passed through very thin boards, hardened india rubber and other substances, but were stopped by thin plates of metal. Professor Lenard also managed to photograph through a very thin plate of aluminium. But one peculiarity of Professor Roentgen's invisible rays is that they pass through many other substances, and even, to a certain extent, through metals. Another very singular property they are said to possess—they do not refract when passing into water or through a prism of glass or crystal. It is supposed that they must move in a manner quite different from that of the other or light rays of electricity, and perhaps on some unknown element of matter. Owing to the absence of refraction, they are thought to move straight forward, not in waves, like ordinary light. It is too early to more than outline the results and prospects of this discovery. It might be of special use not only for its apparent advantages to the practice of surgery, but also for the prospect it offers of submitting machinery and guns to tests as to their freedom from inner strains and defects, more thorough than it has been possible hitherto.

CHARLES DE KAY,

BERLIN, *January 16, 1896.*

Consul-General.

A discovery recently made in Würzburg, Germany, which is attracting widespread interest, is that of Professor Roentgen (professor of physiology) in photography. Professor Roentgen takes a Crookes pipe—a very strong vacuous glass pipe—through which goes an induction stream, and photo-

graphs, by means of rays that are sent out from the pipe, on ordinary photographic plates. These rays, whose existence was never suspected till now, are invisible to the human eye. They penetrate woods, organic matter, and otherwise opaque substances. The papers claim that they will not penetrate iron or metals, but my informant, who attended the meetings where the experiments were made, assures me that the rays were put through 3 inches of hard rubber and carried a good photograph to plates on the other side; also through a $1\frac{1}{2}$ -centimeter iron plate. "Seeing is believing," he writes me. "The photographs," he adds, "taken through the $1\frac{1}{2}$ -centimeter iron plate were true to the life." He will photograph objects inside a wooden box, giving, however, a picture only of the objects inside. The rays penetrate wood and human flesh as ordinary rays penetrate glass. The human body can be photographed in all its parts. Such a photograph reveals none of the soft flesh on hand and foot, but shows the condition of the bones. By this system bullets and needles—in fact, any foreign substance—can be immediately located. "It reads like a romance," say all the German papers, or like an April-fool joke; but, as my informant says, "seeing is believing." Breaks on bones, ribs, etc., may be seen now by this means as clearly as the human skin with the naked eye or through a pair of glasses. Bone diseases, henceforth, are to hide no secret under skin, muscle, or sinew. "The general run of men will make up their minds," writes my informant, "that the man is crazy. Well, so am I, for I stood hours seeing things that hitherto for me were among the impossibilities, and I had had a good course in physics. Even the bowels are to be photographed; a fracture of a bone can be so photographed that nothing will appear except the fracture, and this so clear, so distinct that the minutest details appear. Abnormal growths, hitherto hid from human eye and surgical instruments, are as open now to observation as warts or boils on the exterior of the body."

The most marvelous feature about this system is that the photographs are produced without a photographic machine, *i. e.*, in the accepted sense. All that is needed is a Crookes pipe and sensitive plates or prepared paper. The rays run in straight lines rather than in circles. They come out from the Crookes pipe and penetrate the closed box in which is the prepared paper after passing through the object to be photographed. To protect the prepared paper, it is kept, as in the case of ordinary photographing, in a closed box. The marvel is that in photographing with the Crookes tube the box need not be opened. An ordinary photographing machine can not be used, since the rays running out from the Crookes pipe are unbroken straight lines. These rays, besides being invisible, produce no heat and affect in no way the most sensitive magnetic instruments. It may be regarded as a new discovery in light. Hitherto, physicists have held that such lines carry light, sound, etc., although wave lines were the only ones known to science as doing it. This is, for science, the really most important feature; all the other facts, such as photographing, etc., are secondary.

Like so many great things, the discovery owes its origin to accident.

The professor was experimenting with a Crookes pipe around which he had wrapped some stuff. He ran a strong electric current through the pipe and noticed later some lines on prepared paper—such as he had never noticed before—by electrical experiments. The keen-eyed scientist studied out this line, suspected its cause, experimented and obtained his marvelous discovery. I have here only sketched or related a few facts about a matter that to-day interests the whole scientific world, and about which the newspapers are full.

J. C. MONAGHAN,

Consul.

CHEMNITZ, *January 11, 1896.*

French physicians have been actively engaged in making experiments on the lines laid down by Professor Roentgen, of Würzburg, who has discovered a means of photographing through opaque substances. A report on the experiments has been read before the Paris Academy of Sciences by Professor Launelonge, who is convinced that the discovery made by the Bavarian scientist will be of great use and importance to the medical faculty. The Roentgen rays, as they are called, are said to penetrate dense bodies in straight and unbroken lines of light, described as 100,000 times finer than needles. One of the exhibits produced by Professor Launelonge was the photograph of the hand of a child afflicted with tuberculosis in the bones. The internal condition of the limb was reproduced, and exactly corresponded with the diagnosis given by Professor Launelonge, who had examined the child before the Roentgen discovery was known in France. At the same meeting, photographs were also shown of the interiors of frogs and fishes taken by M. Dufour, of Geneva.

Stronger testimony as to the value of Professor Roentgen's discovery comes from the University of Montpellier. Three medical lecturers connected with that institution have succeeded in photographing a 5-franc piece which was placed inside a purse and had fourfolds of leather between it and the apparatus. The form of the money came out distinctly on the photographic plate, and so, too, did the shape and texture of the interior lining of the purse. It is now proposed in Paris to use the method for the examination of the internal condition of patients in hospitals suffering with obscure diseases.

The Roentgen rays are produced by passing electric sparks through a Crookes tube, which is simply a modification or improvement of the toy known as Geissler's tube, a glass tube from which the air has been exhausted, and into which two platinum wires have been passed. If these platinum threads are united with the two poles of a Ruhmkorft spool, the electrical discharges manifest themselves in the vacuum by characteristic luminous rays, generally of a green color and of great beauty. The modification by Crookes consists simply in a spherical ampoule, or glass globe, instead of a glass tube, by which the surface reflections are greatly augmented. The effect is pro-

duced in fan-like rays given off from the platinum threads on the inside of the sphere, which is connected with the negative pole of the battery, but which appear only when the rays come in contact with the inner wall of the glass ampoule. These rays are known as cathodic rays. Now, if Crookes's apparatus be placed in a dark room and the ampoule be enveloped in a black paper box, hermetically closed, the rays are no longer visible, but they still exist; the new light, or, as it is called, the "invisible light," is there ready to manifest itself when called into action.

The first to establish the existence of this light was Dr. Roentgen. He placed, at a distance from the ampoule thus enveloped, a small screen coated with a layer of platina-cyanide of barium. Very soon the screen was seen to be illuminated, as if spontaneously, with a bright light at each electric discharge. The light evidently proceeded from the ampoule inclosed in the black paper box, ordinarily impenetrable to light, but now penetrated by the cathodic rays therein produced; or, rather, it was a transformation of the cathodic rays into new rays, endowed with new properties, hitherto unknown and unsuspected. These rays Roentgen calls "rays X," but they are now known as the Roentgen rays.

The German professor, continuing his experiments, found that nearly all bodies could be penetrated by the new agent, and he was soon able to establish the fact that the luminous penetration was in a direct ratio to their intensity. Paper, it appears, is one of the most permeable of substances to the rays. "Through a volume of a thousand pages," says the inventor, "placed between the ampoule and the screen, I have seen the rays produced very distinctly on the screen. Thick blocks of wood are penetrated by the rays; a plank of spruce fir, more than an inch thick, intercepted the rays only to a very limited extent; a plate of aluminium, about 15 millimeters thick, sensibly diminished the rays, but without entirely arresting them. If the hand is held between the apparatus and the screen, one sees the shadow of the bony skeleton clearly outlined on the screen, as if stripped of the flesh. Again, if thin plates of copper, gold, or platinum are interposed, the rays are sensibly diminished, and they are altogether arrested by thicker plates of the same metals."

Of all the experiments enumerated, that of the interposition of the hand is the most interesting. When one sees the image of the bones of the hand photographed as the skeleton while the flesh is still on the hand, it is as marvelous as the tricks of the magician. The principle is that the shadows impress themselves in a uniform manner upon the photographic plate as on the fluorescent screen, whenever bodies of unequal thickness are interposed between the apparatus and the photographic plate. The experiments are to be modified according to circumstances. For example, when operating in a very light room, the plate should be enveloped in several thicknesses of black paper, and the ampoule removed from the box. The plate and ampoule are placed about 4 inches apart, and the body to be photographed is inserted between them in such a manner that the rays, after having traversed

the body, will fall perpendicularly on the plate. The electric spool which furnishes the current should be sufficiently large to give sparks of 6 to 8 centimeters. The time occupied in passing the rays varies from 10 to 20 minutes. In photographing the hand, the osseous structures, which arrest all the rays, are shown with remarkable clearness. On the contrary, the skin, muscles, tendons, arteries, veins, etc., are represented by a somewhat cloudy zone, light, faint, and hardly perceptible to the eye. This is due to the fact that these several tissues are easily penetrated by the new light, which passes through them to be arrested by the bones.

News comes to-day that the German Minister of War has taken the necessary steps for introducing the discovery at once into the surgical department of the army, in order that it may be thoroughly studied for use in time of war. A series of negatives already taken in Berlin of a gunshot wound gave an accurate impression of the lesion of the bone, and enabled the surgeon to determine with precision the exact location of the projectile.

C. W. CHANCELLOR,

Consul.

HAVRE, *January 31, 1896.*

REVIVAL OF THE OLYMPIAN GAMES.

The ancient Panathenaic Stadium, in Athens, is being reconstructed for the revival of the Olympian games, which will be inaugurated on the 5th of April, 1896, and will last ten days.

The stadium may be described as an immense open air amphitheater constructed in a natural ravine, artificially filled in at the end. It is in the shape of an elongated horseshoe. The spectators, seated upon the sloping sides of the ravine, look down into the arena below, which is a little over 600 feet in length and about 100 feet wide at the widest part.

Athletic contests date back to the mythical ages of Greece, and were celebrated in Athens before the building of the present existing stadium. Foundations of this structure were laid by Lycurgus, the orator, who lived about 330 B. C. It was afterwards rebuilt by Herodes Atticus on a plane of great splendor and prodigality. The seating capacity of the stadium is 60,000, and Herodes Atticus caused all the seats to be made of pentelic marble.

The revival of modern interest in the stadium is due to the excavations conducted in 1873, under the authority of the King. These excavations laid bare the amphitheater and the arena. In addition to these, there were the ruins of two high supporting walls at the entrance near the Illissus River, and a vaulted underground passageway leading from the closed end of the arena out beneath the hill. This tunnel is supposed to have been an entrance and exit for athletes and judges. To this purpose it is to be put in the rebuilt stadium. Of the vast quantity of marble put into the stadium by

Herodes Atticus, nothing was found except a few dilapidated chairs. All the rest had been fed to the limekiln during the barbarous and ignorant generations.

The renewal of the games was decided upon at the meeting of an international committee, which came together in Paris last year, with the distinguished Greek author, Demetrios Bikélas, at its head. It was then resolved that a series of quadrennial international contests should be held in the principal cities of the world, beginning with Athens. This tribute was paid to Greece as the great originator of athletic exercises, where they were anciently held in such esteem that time was reckoned by the meetings at Olympia.

To this decision is due the rebuilding of the Athenian stadium. A local committee was immediately formed to take the work in hand, with Crown Prince Constantine as president and Timoleon Philemon as general secretary. The serious question of funds was greatly simplified by the immediate donation to the work of 600,000 drachmas* by George Aberoff, a philanthropic Greek of Alexandria. Mr. Aberoff has since made other donations, and has promised more if necessary.

According to the original plans of the architect, the repairs to the stadium were to cost 580,000 drachmas, and the work was commenced upon that basis. It has since been found that this estimate was too low, and 250,000 drachmas have been added thereto.

The stadium, as rebuilt for the games, will consist of (1) the arena, bounded by a marble curbing, surmounted by an iron railing adorned with Athenian owls; (2) a walk between this curbing and the first row of seats; (3) a low retaining wall of marble on which rests the first row of seats, the entire row being of marble; (4) the seats; (5) the underground tunnel. In addition to these features there will be an imposing entrance, a surrounding wall at the top of the hill, and two supporting walls at the entrance. As far as possible, in the reconstruction of the stadium, the old portions will be used, where these are in a sufficient state of preservation, and an effort will be made to reproduce, as nearly as practicable, the ancient structure. The seats at present will not all be made of pentelic marble, as there is neither time nor money for such an undertaking. At the closed end of the arena, seventeen rows will be made of pentelic marble, as well as the first row all the way around. The remaining rows up to the first aisle are being constructed of Piræus stone. These will accommodate 25,000 seated spectators. From this aisle to the top, will be placed wooden benches for 30,000 seated spectators. Add to these standing room for 5,000, and we have the holding capacity of the stadium 60,000 without crowding.

There are at present engaged upon the construction between 500 and 550 workmen. Of these about 200 are employed in the stadium itself, 150 in the quarries in Penteles, 60 in the quarries in Piræus, and 150 in preparing rock for substructures, etc. The workmen receive each from 6½ to 7

*The consul estimates the currency drachma at about 11 cents.

drachmas a day. The highest wages earned are by some of the more skilled laborers who work by the piece. These earn as high as 8 drachmas a day.

Extensive preparations are being made for cleaning and beautifying the city for the reception of its expected guests. The parks are to be laid out with shrubs and flowers, and brilliantly lighted with electric lights, as also the principal road leading to the stadium.

The programme of events includes long and short distance running, running long and high jump, pole vaulting, putting the weight and throwing the discus, parallel bars, fencing, Greek and Roman wrestling, marksmanship, yachting, rowing and swimming, bicycling, lawn tennis, and cricket.

There was considerable discussion on the subject of boxing, and some of the committee were in favor of this sport on the ground that it figured so prominently in the ancient contests. These members also no doubt appreciated the fact that pugilism would prove an attraction to many spectators. The sport was finally ruled out, however, as not sufficiently civilized.

An important feature of the contests will be bicycle races. Interest in the wheel is steadily on the increase in Greece, and bids fair to develop into a craze after the Olympian games. Some of the merchants here are doing a flourishing business in the sale of wheels, nearly all of English make. An American firm should be represented here. I reserve this subject for a separate report.

There are various ways of getting to Athens, among which may be mentioned the following: New York-Liverpool-Patras, and New York-Liverpool-Syra, Cunard and Mors lines; New York-London-Brindisi to Patras, and New York-Marseilles to Athens, Messageries Maritimes de France, and Compagnie Fraissinet; New York-Naples to Athens, and New York-Genoa to Athens, Navigazione Generale Italiana, and Austrian Lloyd; London-Trieste-Patras, Austrian Lloyd. Athens is about four days' journey from London.

A few years ago Greece was only visited by archæologists and students. General travel in this direction has but recently set in. Last year about 1,500 Americans visited this city, and 42 citizens of the United States are residing here for the winter.

There is much talk of restoring the stadium completely in marble after next April, as a permanent reminder to the present generation of the glorious days of Greece, during which physical culture was much esteemed. The architect estimates that for such complete restoration a sum of 2,500,000 drachmas (about \$275,000) will be necessary.

GEORGE HORTON,
Consul.

ATHENS, *November 25, 1895.*

THE LEMON INDUSTRY OF SICILY.

LAND.

Lands do not pass from one owner to another here except in cases of extreme necessity. For want of money, a proprietor may part with his land; hence there exists no regular market value. Then there is the great difference in soil and location—whether with or without water for irrigation on the plain, or on the lower slopes of the mountains.

(1) Naturally fine garden land on the lower slopes and at the base of the mountains, enriched by the wash from the ever-decaying lava, or humus, and traversed by aqueducts (thus having superior facilities for irrigation), are estimated as being worth 6,000 to 8 000 lire per ettaro ($2\frac{1}{2}$ acres), or about \$432 to \$576 per acre.

(2) Land on the plain, suitable for lemon culture, with wells and pumps (worked by mules) for irrigation, are valued at about 3,000 to 4,000 lire per ettaro (\$216 to \$288 per acre), according to distance from the city or railroad, as well as the quality of the land.

(3) Lands on the plain which, although good for producing grain, pulse, etc., being clay and without water, and not considered suitable for lemon culture, are estimated at from 2,000 to 3,000 lire per ettaro (\$144 to \$216 per acre).

Then there is much land covered with rocks or lava almost worthless. Lemons do not thrive in as high altitude as oranges.

COST OF FULL-BEARING ORCHARDS.

The cost of a full-bearing orchard depends not only upon location, but age, and, principally, the quality or variety of the fruit. The fine, large variety known as "Spatafora," which grows, beginning about midway between Catania and Messina, around Aci Reale and in the Messina district, would, possessing the advantages considered under 1, be worth not less than \$864 to \$900 per acre, while other good varieties, not too far from city or railroad, would cost \$720 to \$864 per acre.

The value of orchards is now considered to be from 25 to 50 per cent less than it was ten years ago, owing to the low prices received for lemons during the last few years. The lowest value for lemon orchards is in the plain of Catania, about Syracuse, that being mostly low, flat land, and the lemons inferior. Such land is valued at about \$576 per acre. There are generally about 200 trees to the acre.

THE BEARING AGE.

The bearing age is from the tenth to the thirtieth and even fortieth year. The young trees are generally raised in nurseries from the seed of "bitter orange." When 2, 3, or 4 years old (depending upon the more or less

vigorous growth), they are budded, according to their shape and size, with one, two, three, or more buds, and the first or second year after this the trees begin to bear a few lemons, increasing with every year until about the fifth or sixth year after the budding, when the trees bear finer fruit and nearly full crops.

PREPARING LEMONS FOR MARKET.

The lemons are brought from the orchards to the warehouses in Catania in large baskets, holding about $1\frac{1}{2}$ bushels each. In the warehouses of the packers and shippers are a number of long wooden troughs, lined with burlap and padded with cotton, sea grass, etc. (to keep the fruit from being bruised), into which the baskets are emptied, and in which the fruit remains from four to five days. At the end of this period, any tainted fruit, or fruit likely to rot during shipment, will have developed symptoms thereof sufficiently to be observed by the expert women sorters. On the other hand, all the fruit which has stood this test period and appears sound and well at the end of the five days, is said to be able to stand long shipment and keep for quite a time. Lemons picked in November will keep four to five months in the boxes. Some of the leading shippers open the boxes again (of the fall crop), if kept on hand over fifteen days, and have them picked over in case there should be a few rotten ones. Besides this, no other method of curing lemons is practiced. After inspection, they are wrapped and packed. The lemons shipped to near-by ports are not generally so carefully selected as those intended for the United States.*

The houses used for curing lemons before shipping are ordinary warehouses, which formerly might have served other purposes, as in one instance a building formerly used as a sulphur refinery. These are, like all buildings in this country, of stone, with tile roofing, generally without flooring, and well ventilated. They are provided, as before stated, with a number of long, padded troughs for receiving and picking over the fruit, and with long, low tables for packing and nailing up the boxes.

In some few cases, where the producers have a considerable crop of their own, they pack and ship it themselves, but in most cases the packers and shippers are purchasers only, and not producers.

The fruit is picked green in September, October, November, and December, and turns yellow in the boxes, while in the months of January, February, March, April, and May the fruit is yellow when picked from the trees; the latter, however, does not keep as well as that picked in September, October, November, and December. That picked in November keeps best of all.

The forced crop, "verdelli" (a greenish lemon, hard, sound, and a good shipper, the growth of which I have fully described in my report to the Department of State of January 12, 1895†), is picked green in June and July.

*The lemon orchards in this district suffer greatly from the black and the white louse. The lemons are not only injured in appearance, but they have to be cleaned by hand with sharp sticks and brushes, necessitating much labor and expense.

† Published in CONSULAR REPORTS No. 175 (April 1895), p. 527.

Choice lemons for shipment in boxes are not generally picked until they have the proper size (88 to 100 grams), unless the crop should be very short, when 77 gram lemons may be picked.

The boxes contain of the full-sized fruit 300 and 420 lemons, the smaller numbers being the 88-gram and the larger the 100-gram fruit. All lemons intended for boxing and shipping, unless for very near ports, must be carefully cut off the trees with a knife or shears; dropped fruit can not be used. The receiving baskets must be lined and padded, for bruised fruit, no matter how slight the bruise, will spoil in transit.

LABOR.

The average cost of labor per day in United States money in handling lemons is as follows: Overseer, 53 to 63 cents; experienced women who select the fruit, 31 cents; wrappers (in tissue paper), 19 cents; girls who clean lemons (pick out lice with sticks and brushes), 14 cents; girls who do other various kinds of labor, 16 cents. All these are, with the exception of the overseer, women and girls, who have to feed and clothe themselves out of these scanty wages. They live upon a "panuzza" (a small loaf of bread) twice a day, with a little fruit, a plate of macaroni and perhaps a glass of cheap wine. They commence to work early in the morning—at this season before daybreak—do not eat anything until about 10 or 11 o'clock, when they rest a few minutes and eat their bread. The men who make and nail up the boxes receive 46 cents per day, and those who pick the fruit off the trees 27 cents. Another expense is transport to city, the amount depending upon distance.

PRICE OF GREEN LEMONS.

Lemons are bought by the thousand, 1,040 counting 1,000 lemons. The prices paid are about as follows:

For the September-December crop, from 12 to 14 lire (\$2.16 to \$2.52) per 1,000, the November crop always bringing the highest price, January-May crop 5 to 7 lire (90 cents to \$1.26) per 1,000. Choice fruit of the January-May crop, which will bear shipping to England and the United States, bring as high as \$1.80 per 1,000; the other is shipped to Trieste and other near ports.

The large "spatafora" lemons, which are yellow in February and March, bring \$3.60 to \$4.50, and even as high as \$6.30 (35 lire) per 1,000.

The "verdelli," picked in June and July, run from \$3.60 to \$7.20, and have a run as high as \$9 (50 lire) per 1,000.

These prices (in depreciated currency*) are for the fruit on the trees, 1,040 lemons being counted as 1,000.

WEIGHT AND SIZE.

The weight is about 86½ pounds per box; half boxes of lemons are not put up. Oversized lemons are cut into quarters and packed in brine (sea

* These prices, the consul says, are in depreciated currency, yet he makes reductions from lire to dollars at gold rates. It follows that the prices given in American money are too high.

water) in barrels and shipped to London for confectioners' use, and usually bring good prices, especially the spatafora. The culls are either cut up and packed in brine or peeled, the juice pressed out, boiled down, and sold as "agro cotto" in barrels, for the manufacture of citric acid, etc. Out of the peel oil of lemon is extracted.

In conclusion, I will state that as it seems to be the general opinion among fruit growers in the United States that some mode of curing lemons before packing and shipping is practiced, I have made every possible inquiry and learned that such methods, except as stated herein, are entirely unknown here. The remark has been made that it would be impracticable to handle them in any other way which would demand more labor.

LOUIS H. BRÜHL,

CATANIA, December 13, 1895.

Consul.

CROPS OF ITALY.

ORANGES, LEMONS, ETC.

The completed returns show the number of oranges, lemons, citrons, and bergamots harvested in 1894 to have been 3,549,877,390. The harvest was slightly more abundant than in 1893. The season, in the districts of greater production, was fairly favorable to the gathering of the crop.

The limited production of green fruit in Venetia and Lombardy was damaged by cold and drought. In Liguria, in the Marches, Umbria, and Tuscany, although the harvest proved slightly better than that of the preceding year, cold and drought produced damage.

The freezes of 1893 wrought serious injury in the Latium, so much so that the orange and lemon trees still show the effects.

In southern Italy, on the Mediterranean, as well as on the Adriatic slope, cold, drought, and in some provinces frost and the southwest wind interfered with a larger yield; the crop, however, can not be considered a short one, and was slightly larger than that of 1893-94. The crop of Sicily was relatively good and larger than that of the preceding year.

Oranges constitute 40 per cent, lemons 55 per cent, and citrons, mandarins, and bergamots 5 per cent of the total green fruit crop.

Production, commerce, and consumption of green fruit in Italy for the five years 1890-1894.

Description.	1890-91.	1891-92.	1892-93.	1893-94.	1894-95.
Annual production.. { number ...	3,966,860,000	3,163,350,000	3,139,578,000	3,320,379,000	3,549,877,390
{ quintals*..	4,958,575	3,954,188	3,924,472	4,150,474	4,437,347
Importations:					
Oranges and lemons†..do....	4,413	3,956	1,994	1,527	1,065
Citrons†.....do.....	21,044	20,897	25,851	12,295	16,967
Exports:					
Oranges and lemons†..do....	1,903,029	1,344,618	1,699,103	1,973,249	2,143,473
Citrons†.....do.....	2,682	7,042	5,525	4,885	4,538
Left for consumption.....do....	3,078,321	2,617,381	2,237,689	2,158,318	2,307,368

* 1 quintal = 220 pounds; 800 oranges and lemons = 1 quintal.

† Including fruit in brine.

Exportation of oranges, lemons, and citrons, including fruit in brine, from Italy to the principal foreign countries for the five years 1890-1894.

Exported to—	1890.	1891.	1892.	1893.	1894.
	<i>Quintals.*</i>	<i>Quintals.*</i>	<i>Quintals.*</i>	<i>Quintals.*</i>	<i>Quintals.*</i>
Austria-Hungary.....	256,658	179,551	240,615	272,078	377,572
Belgium.....	8,000	2,133	5,678	7,063	6,091
Denmark.....	14,477	9,798	5,546	6,677	8,472
France.....	7,899	11,261	17,890	13,948	17,444
Germany.....	48,120	34,888	47,830	71,709	56,663
Great Britain.....	263,020	246,508	298,008	289,021	320,998
Greece.....	2,132	1,968	1,924		
Malta.....	2,714	3,243	3,835	6,192	6,267
Holland.....	14,135	16,625	8,127	6,952	16,699
Roumania.....	2,058		1,340	4,197	3,167
Russia.....	66,615	46,871	73,878	116,497	138,900
Sweden and Norway.....	5,233	3,646	23,450	5,121	4,583
Switzerland.....	3,957	3,863	4,059	7,630	8,307
Turkey in Asia.....				2,240	25,370
Turkey in Europe.....	40,365	33,760	57,116	43,364	44,930
Asia, divers countries and British possessions.....		136		371	
Egypt.....	1,340	371	692	422	2,478
Other African countries.....	765	81	460	466	247
United States and Canada.....	1,164,798	754,705	912,183	1,123,095	1,103,998
Argentine Republic.....	1,002	763	562	89	345
Uruguay.....	504	427			
Australia.....	1,675	1,093	1,435	1,002	5,340
Central America.....	244				
Brazil.....					140

* 1 quintal=220 pounds.

RICE CROP.

The Italian rice crop for the five years ending with 1894 was in hectoliters (1 hectoliter=2.838 bushels), as follows:

Year.	Area of cultivation.	Annual production.		Importation.	Exportation.	Quantity required for sowing.	Quantity left for consumption.
		Mean per hectare.	Total.				
	<i>Hectares.*</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>
1890.....	193,093	32.64	6,303,093	200,720	231,468	579,279	5,693,066
1891.....	194,689	35.63	6,937,594	339,429	804,745	584,067	5,888,211
1892.....	197,827	36.7	7,260,034	12,021	793,341	593,481	5,885,233
1893.....	161,583	30.01	4,849,894	1,460	880,229	484,749	3,486,376
1894.....	165,108	34.75	5,738,015	291	1,013,138	495,324	4,229,844

* 1 hectare=2.471 acres.

LEGUMES.

The approximate crop of beans, vetch, chickling vetch, lupines, chick-pease, and pulse in Italy in the years 1890 to 1894 was as follows: In 1890, 3,683,840 hectoliters; 1891, 3,818,568 hectoliters; 1892, 3,096,012 hectoliters; 1893, 2,743,590 hectoliters; 1894, 3,451,260 hectoliters. In the harvest of 1894 the division was as follows: Beans, 2,591,426 hectoliters;

lupines, 81,561 hectoliters; chick-pease, 279,142 hectoliters; vetch, 352,172 hectoliters; chickling vetch, 130,507 hectoliters; pulse, 19,452 hectoliters.

WHEAT.

Following are the approximate figures of the Italian wheat harvest in 1894:

Year.	Area of cultivation.	Annual production.		Importation.	Exportation.	Quantity required for sowing.	Quantity left for consumption.
		Mean per hectare.	Total.				
	<i>Hectares.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>
1890.....	4,407,403	10.51	46,320,150	8,269,051	5,359	5,288,883	49,294,959
1891.....	4,502,036	11.07	49,852,468	5,953,423	8,923	5,402,443	50,394,595
1892.....	4,529,574	9.00	40,769,024	8,937,731	6,410	5,435,489	44,262,856
1893.....	4,556,396	10.46	47,653,791	11,043,820	8,641	5,467,675	53,221,295
1894.....	4,573,834	9.37	42,849,900	6,241,615	4,795	5,488,600	43,598,100

The wheat harvest in 1894, according to summary telegraphic information published in the Bollettino di Notizie Agrarie, No. 16, August, 1894, was estimated at 43,333,400 hectoliters. According to more definite information, it is stated to be only 42,489,900 hectoliters (120,246,477 bushels), being thus inferior to that of 1893 by 4,803,891 hectoliters, although the area of cultivation was greater by 17,438 hectares. This diminution in the harvest was caused by the excessive rains, fogs, and winds in the spring, which damaged the blossoms, and by the prolonged absence of rain during the summer, accompanied by very strong winds.

RYE.

Following are the figures of the Italian rye harvest for the last five years in hectoliters: In 1890, 1,559,940; 1891, 1,613,013; 1892, 1,498,240; 1893, 1,585,262; 1894, 1,517,574 hectoliters.

BARLEY.

The production, commerce, and consumption of barley in Italy from 1890 to 1894 was:

Year.	Area of cultivation.	Annual production.		Importation.	Exportation.	Quantity used for sowing.	Quantity left for consumption.
		Mean per hectare.	Total.				
	<i>Hectares.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>
1890.....	332,151	11.63	3,863,288	157,774	102,081	597,871	3,321,110
1891.....	307,806	11.1	3,415,800	195,129	35,194	554,051	3,021,684
1892.....	313,152	8.93	2,797,176	247,532	1,371	563,674	2,479,663
1893.....	322,896	8.65	2,792,306	221,097	35,485	581,213	2,306,705
1894.....	303,047	9.7	2,938,112	446,306	165,500	545,484	2,673,434

FLAX.

The following table shows the production, sale, and consumption of flax from 1890 to 1894:

Year.	Area of cultivation.	Production.	Importation.	Exportation.	Home consumption.
	<i>Hectares.</i>	<i>Quintals.</i>	<i>Quintals.</i>	<i>Quintals.</i>	<i>Quintals.</i>
1890.....	55,271	209,221	252	569	208,904
1891.....	52,098	187,452	311	440	187,323
1892.....	51,858	196,983	1,003	187	197,799
1893.....	51,902	168,655	1,019	1,953	167,721
1894.....	51,676	187,352	1,955	563	188,744

GRAPES.

The production, sale, and consumption of wine from 1890 to 1894 was as follows:

Year.	Area of vine cultivation.	Annual production.		Importation in barrels and bottles.	Exportation in barrels and bottles.	Quantity remaining for home consumption.
		Mean per hectare.	Total.			
	<i>Hectares.</i>	<i>Hectoliters.*</i>	<i>Hectoliters.*</i>	<i>Hectoliters.*</i>	<i>Hectoliters.*</i>	<i>Hectoliters.*</i>
1890.....	3,430,362	8.59	29,456,809	16,765	935,778	28,537,796
1891.....	3,443,713	10.74	36,992,135	10,729	1,179,192	35,823,672
1892.....	3,466,447	9.8	33,971,768	9,800	2,449,120	31,533,149
1893.....	3,434,760	9.36	32,163,523	24,397	2,362,703	29,825,217
1894.....	3,451,003	7.48	25,816,588	57,249	1,943,151	23,930,686

*1 hectoliter=26.417 gallons.

OLIVES AND OLIVE OIL.

The production, commerce, and consumption of olive oil in Italy from 1890 to 1894 was as follows:

Year.	Area under cultivation.	Oil.				
		Annual production.		Importation.	Exportation.	Quantity left for consumption.
		Mean per hectare.	Total.			
	<i>Hectares.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>	<i>Hectoliters.</i>
1890.....	1,013,151	3.05	3,086,119	27,976	420,053	2,693,742
1891.....	1,031,470	2.66	2,739,554	24,902	631,531	2,132,925
1892.....	1,043,579	1.62	1,686,386	6,146	637,862	1,054,670
1893.....	1,060,905	2.77	2,941,316	36,998	473,621	2,490,693
1894.....	1,044,327	2.03	2,120,116	84,250	672,452	1,531,914

FORAGE.

Year.	Hay.			Green forage.		
	Area under cultivation.	Quantity produced.		Area under cultivation.	Quantity produced.	
		Mean per hectare.	Total.		Mean per hectare.	Total.
	<i>Hectares.</i>	<i>Quintals.</i>	<i>Quintals.</i>	<i>Hectares.</i>	<i>Quintals.</i>	<i>Quintals.</i>
1889-90.....			74,148,129			81,758,082
1890-91.....			69,954,196			68,153,154
1891-92.....	2,357,455	25.72	60,623,259	3,162,084	19.54	61,773,066
1892-93.....	2,338,980	20.25	47,354,855	3,250,610	14.31	46,526,610
1893-94.....	2,425,419	20.99	50,919,381	3,574,194	14.82	52,954,437

WOOL.

The following table shows the production and commerce of wool in Italy:

Year.	Production.		Importation.		Exportation.	
	Quantity.	Average price per kilogram.	Quantity.	Average price per kilogram.	Quantity.	Average price per kilogram.
	<i>Kilograms.*</i>	<i>Lire.†</i>	<i>Kilograms.*</i>	<i>Lire.†</i>	<i>Kilograms.*</i>	<i>Lire.†</i>
1890.....			5,282,300	3.29	1,046,400	3.02
1891.....	9,622,846	1.90	5,912,400	2.70	1,047,000	2.67
1892.....	9,957,719	1.81	6,062,800	2.28	1,898,000	2.61
1893.....	9,730,032	1.76	4,435,800	2.65	1,468,800	2.76
1894.....	9,608,718	1.74	4,501,300	2.37	2,652,000	2.49

* 1 kilogram—2.2046 pounds.

† 1 lira=19.3 cents.

WALLACE S. JONES,

Consul-General.

ROME, November 23, 1895.

ITALIAN ORANGES AND LEMONS FOR THE UNITED STATES.

I am indebted to Messrs. F. S. Ciampa & Sons, of Piano di Sorrento, the largest exporters of green fruit from this peninsula, for the information contained in this report.

After Sicily, the greatest orange and lemon producing center of southern Italy is the Sorrentine peninsula and Rodi, of which the former is the more important.

Oranges take about six months to ripen, and only one crop is obtained yearly, while lemons ripen somewhat quicker and two gatherings are made within the same period.

Harvesting lasts from the second half of November until the latter part of August.

The exportation to the United States generally commences at the end of January and proceeds through the season, but this year the fruit will be marketed in December, owing to advices received as to the damaged state of the Florida orchards which, it is said, will supply only about 200,000 boxes, as compared with from 3,000,000 to 5,000,000, the estimated crop before last year's damage by cold.

The quantity of fruit exported from Sorrento to the United States last season may be approximately estimated at 220,000 boxes of oranges and 30,000 boxes of lemons, while for the coming season the amount will probably be 145,000 boxes of oranges and 20,000 boxes of lemons.

The so-called "winter cut" of oranges—that is, the fruit gathered and stored in winter—was durable and sound and brought moderate prices, but afterwards persistent raw, strong winds, hail, and frost injured and destroyed a large proportion of the fruit, and whatever was shipped to the United States was sold at a heavy loss to consignors.

The Continent and Great Britain were better markets, for at least cost price was recovered and in some cases a slight profit made, but shipments to these markets were much less than those sent to the United States.

Rodi oranges, which enjoy a high reputation in America and are by far the best quality of fruit grown in Italy, were likewise damaged and their value consequently depreciated for the same reasons.

The coming crop both at Sorrento and Rodi may be estimated at about two-thirds of the usual average, and perhaps less, but the damage will not affect future crops, as the trees have not been partially destroyed, as in Florida. The quality promises to be superior to the last, and opening prices will be higher than before, varying from 6 to 8 lire* per box; but this will naturally depend on the weather during this winter.

HENRY GREENOUGH HUNTINGTON,
Commercial Agent.

CASTELLAMARE DI STABIA, *November 26, 1895.*

THE WOOLEN INDUSTRY OF ITALY.†

The Parliamentary inquiry in 1872 summed up the factories of the district of Biella alone, large and small, at 125, and their total production at 81,400,000 lire (\$15,710,200).

At that time, the mechanical looms numbered about 1,000, and the industrial statistics of 1876 for all Italy gave but 2,354, without, however, including 5,989 handlooms.

The steam motors were scarce, there being for Biella enough hydraulic motors in the Valley Sessera and the Valley Strona, the latter torrent, at the

*The value of the Italian paper lira at the present rate of exchange is 17.8 cents, instead of the gold standard of 19.3 cents.

† Translation by Consul Brühl, of Catania, from the *Gazze di Catania*, of November 22, 1895.

present day, all utilized, yielding a volume of water of from 300 to 400 liters per second.

In the Venetian district, which extends also into the Valley dell'Agno and stretches out to Thiene, the first steam engine came into use in 1849 at Schio.

Now, at Schio, and in the neighboring Valley dell Astico and del Pesino, although rich in water power, the steam engines are numerous and powerful, being from 200 to 500 horsepower.

The increase of mechanical looms in the district of Biella—at first contested by the weavers—is now very considerable.

In the entire Kingdom, it is calculated that there are now 6,303 mechanical and 3,685 handlooms, without estimating the small handlooms at the homes of the operators.

The most important woolen factory in Italy is that at Schio, with 2,200 operatives.

The mills of Italy number 431, with 121 steam and 406 hydraulic motors, and give work to 30,240 operatives, a figure perhaps lower than the true number, because it does not include the operatives of the secondary industry, as the simple washhouses, 8 in number, and the factories of mechanical wool, which produce more than 5,000,000 kilograms (1 kilogram=2.2046 pounds) of renovated wool, picked out of unraveled rags (shoddy).

The spinning and combing mills number 11, with 4,258 operatives, of which the oldest and most important is that of Borgosesia, with annexed works for weaving, dyeing, and other preparations. It now goes under the name of Lanificio Rossi (Rossi Woolen Works).

In threads of combed wool, the production of the country is insufficient for the demand of the weaving and knitting establishments, there having been imported in 1893, 3,992 quintals (of 220.46 pounds) of single yarn, and 6,814 quintals of twisted yarn, and, in 1894, 5,322 quintals of single and 6,996 quintals of twist. This importation of combed threads shows the lack of spinning and combing establishments, owing to the great cost of the plants, which is not in harmony with the trifling distinction which exists between the customs tariff on carded and combed wool.

The following table determines, indirectly, the advancement of the Italian manufactories from 1864 to the present day:

Year.	Importations of—		Total.
	Threads.	Textures.	
	<i>Lira.*</i>	<i>Lira.*</i>	<i>Lira.*</i>
1864.....	773,930	65,104,767	65,878,697
1874.....	1,604,380	50,383,856	51,988,146
1884.....	4,890,600	68,850,210	73,740,810
1894.....	8,384,054	34,653,555	43,037,609

* 1 lira = 19.3 cents United States, less the depreciated currency, at present 8 per cent.

There exist in Italy, as has been said, 6,303 mechanical and 3,685 hand-loom, or in all 9,988 active looms, besides the small home looms. Estimating the production of each loom at 10,000 lire, gives a total annual value of 99,880,000 lire of Italian production. Adding 34,653,355 lire, the value of the woolen texture introduced into Italy from foreign countries, and the internal consumption becomes established at 132,553,555 lire.

FRENCH VINTAGE OF 1895.

An official statement is made of the results of the vintage of 1895 in France. The total production for the year is estimated at 26,688,000 hectoliters* (705,016,896 gallons), a reduction of 12,365,000 hectoliters as compared with 1894 and of 4,014,000 hectoliters from the average of the last ten years. Including Corsica (about 300,000 hectoliters) and Algeria (3,798,000 hectoliters), the aggregate production will be 32,000,000 hectoliters (818,927,000 gallons).

Of the 78 wine-producing departments, an increase is reported from only 19, and a decrease from 59. The diminished production is attributed principally to the heavy rains which fell early in the season, destroying many vines, and which were followed by the appearance of cryptogamic disease in numerous vineyards. Only in a few departments did the climatic conditions change in time to overcome these losses.

While the quantity of the production was unfavorably affected in this manner, the exceptional temperature of the autumn exercised a happy influence on the quality of the wines. Therefore, notwithstanding a reduction of one-third in the yield, the value of the vintage, which amounted in 1894 to 929,000,000 francs (\$179,297,000) is estimated this year at 830,000,000 francs (\$160,190,000), which is divided as follows: (1) Superior wines (wines of which the net price at the vineyards exceeds 50 francs per hectoliter, equal to 36.52 cents per gallon), 74,000,000 francs (\$14,282,000), corresponding to a production of 905,000 hectoliters (23,907,385 gallons); ordinary wines (price at the vineyards 50 francs and under per hectoliter), 756,000,000 francs (\$145,908,000), corresponding to a production of 25,783,000 hectoliters (681,109,511 gallons), or an average net price at the vineyards of 30 francs per hectoliter (\$5.79 per 26.417 gallons).

SAMUEL E. MORSS,

Consul-General.

PARIS, *December 6, 1895.*

*1 hectoliter=26.417 gallons.

SHERRY VINTAGE OF 1895.

The quantity of "mosto" (new wine) has fallen far short of that obtained the previous year, which was also short. This year is, therefore, much below the average. At the beginning of the season, the vineyards generally presented a most healthy and flourishing condition, which caused reasonable expectation of an abundant yield. This, however, was not realized, as the vines during the summer were attacked by phylloxera and mildew, both of which the vineyard owners seemed powerless to check.

The class of grape used for making sweet wines called "Pedro Ximenez," appears to have suffered most from disease. In some vineyards, the entire crop of this grape shrivelled up and fell from the vines considerably before maturity. The gathering and pressing of the crop generally was effected during very unfavorable weather, much rain having fallen at the time.

The official data for 1895 show 7,700 hectares (19,027 acres) of vineyard in cultivation, producing 15 hectoliters of "mosto" per hectare, a total production of "mosto" for 1895 of 115,500 hectoliters (3,051,163 gallons), being equal to about 26,000 butts.

The average annual production of new wines in the district in previous years, before the appearance of the phylloxera, was 34,000 to 36,000 butts, so that the last vintage shows a decrease of at least 8,000 butts, this decrease being due to the above-mentioned cause.

The quality of the 1895 vintage, on the other hand, is represented as being very good and much superior to that of several preceding years. This fact, and the comparatively small supply, have operated in giving an upward tendency to prices, and the general opinion is that the majority of producers profited, rather than lost, by the shortness of the crop. Another circumstance that has contributed to this satisfactory result has been the purchase of considerable quantities of young sherries for exportation to France for distillation into brandies, etc.

There has undoubtedly been a very short crop, but as regards quality, it is impossible to speak with any degree of certainty until the "mostos" are racked from the lees next spring.

The production of sherry may increase in subsequent years, especially if the efforts to extirpate the phylloxera prove successful; but the prevailing impression is to the contrary, based as it is upon the belief that the vineyards abandoned because of that pest, will not again be replanted or cultivated.

CHAS. L. ADAMS,

Consul.

CADIZ, December 21, 1895.

EGYPTIAN VS. AMERICAN COTTON.

The United States buys more and more long-fibered Egyptian cotton each year, and there is no foretelling to what extent the trade may grow with the great revival of manufacturing and the finding of new uses for it. Ten years ago, the shipments to the United States were only 3,815 bales, while for the current twelvemonth, beginning September 1, 1895, a reasonable estimate is that 50,000 bales will be sent thither, valued at \$3,750,000. It must be borne in mind that an Egyptian bale weighs 750 pounds—half as much more as the American standard, showing that the predicted shipment will be equal to 75,000 American bales.

The statistical history of the rise of cotton culture in Egypt and the marvelous increase in America's consumption of the fiber, is told in the following table :

Season.	Quantity produced.	Shipped to United States.	Equal to American bales of 500 pounds.
	<i>Bales.*</i>	<i>Bales.*</i>	
1885-86.....	406,000	3,815	5,722
1886-87.....	417,000	4,700	7,050
1887-88.....	411,000	5,792	8,688
1888-89.....	389,000	8,430	12,645
1889-90.....	427,168	10,470	15,235
1890-91.....	538,003	23,790	35,685
1891-92.....	612,025	27,739	41,608
1892-93.....	680,085	42,475	63,712
1893-94.....	631,000	33,606	46,409
1894-95.....	639,582	44,554	66,831
1895-96 (estimated).....	692,333	50,000	75,000

*Of 750 pounds each.

As I have previously informed the Department of State in reports on the Egyptian industry, those interested in the trade assert that the use of this cotton is in no sense inimical to American interests, for it is indispensable in many branches of manufacturing that have sprung up in the United States, and that the home-grown and commoner fiber finds enhanced uses through being largely mixed with the imported article. The staple of the cotton from the Nile delta, varying from 1 inch to 1½ inches in length, is admittedly matchless for fine threads where strength and luster of finish are essential. It is an excellent substitute for sea island, and can be had at a price so low in comparison that mill owners are venturing upon special manufactures hitherto controlled by British mills.

American quotations regulate the price in Egypt, which, for high-grade cotton, is usually 2 cents a pound in excess of the price for good American upland cotton. New York and New Orleans quotations are posted several times each day on the Alexandria bourse and govern every transaction.

It being so thoroughly demonstrated that cotton of the Egyptian type is a necessity, always to command a high price, I dislike to think that our country can not produce its equivalent, or that irrigated Nile soil contains any peculiarity of a fertilizing nature not to be found somewhere in the south, or created. Some of the bottom lands of the great Mississippi Valley and of the Brazos district, in Texas, might offer analogous conditions, one would suppose, and be made to produce a fiber equal in quality, if not in quantity. Old-time methods of cultivation and old-time staples are not consistent with the progressive spirit of the new south, surely.

That long-fiber cotton is the staple of the future, is proved by the important value placed upon that of the Nile country by every manufacturing nation of the universe. The demand for it is growing with astonishing rapidity, and overproduction is an unlikely contingent. It seems to me that American agricultural genius should be exerted in order that our Southern States might give northern and European spindles any and every staple required for finding a profitable market. Egypt is producing more and more cotton each year, and adding vastly to its cultivable area, every acre of which presumably will be devoted to cotton.

I feel that I can not too frequently reiterate the opinion that American cotton growers should not permit themselves to be outdone by any country, or believe that any soil, even Egypt's, is possessed of miraculous qualities. I am aware that in some States experiments have been made with Egyptian seed bought in the open market in Alexandria and distributed by the Department of Agriculture and that the results not having been encouraging, the project has been dropped.

It would be logical, in buying test seed in Egypt, not to have the seller know it was going to America. Even Egyptians and Alexandrian brokers possess the instinct of self-preservation. A practical way to obtain prime seed would be to have it purchased at the ginning establishments without revealing its destination or purpose. A representative visiting the gins and finding a superior lot of cotton, could buy the seed and superintend its packing and shipment, independent of outside assistance. As in the United States, there are many kinds of cotton seed in Egypt, good and bad.

Home planters must not assume that their Egyptian rivals have everything their own way. Nature has been generous to them, but they have difficulties to contend with not to be found in a similar degree in the United States. Their land costs from \$100 to \$175 an acre; if leased, the rental is enormous. The taxes range from \$6 to \$8 per acre, and if forced to go to the money lender for needed capital, they pay from 12 to 15 per cent interest.

If the Southern planter could produce the same long staple, he would be better off than the peasant of Egypt, in a monetary sense, with a crop half as large, acre for acre, probably. It is the staple he should work for rather than the yield. Is not the prize worth competing for, intelligently and persistently refusing to acknowledge defeat after two or even three disappoint-

ments? America will always lead the world as a producer of standard cotton, grown on common soil, but have we not somewhere in our vast territory and varied climate a soil that can be utilized for growing the "gilt-edge" fiber that all the world wants and is willing to pay well for?

The Nile crop of 1894-95 was normal, averaging between 4 and 5 cwts. an acre, and distributed among all the countries of the world where manufacturing is carried on. The subjoined statement shows the nations purchasing last year's product, the entire crop being exported:

Exported to—	Quantity.	Exported to—	Quantity.
	<i>Bales.*</i>		<i>Bales.*</i>
United States.....	44,554	India.....	7,600
Great Britain.....	276,294	Greece, Roumania, and Turkey.....	5,102
Russia.....	132,309	Belgium.....	2,512
Austria.....	54,457	Japan.....	113
France.....	46,242	Sweden.....	112
Italy.....	43,803	Total.....	639,582
Spain.....	19,007		
Germany.....	7,477		

*Of 750 pounds.

Of American purchase, 36,000 bales were sent to Boston, 7,000 to New York, and 1,000 or more to Fall River. It was nearly all transhipped at Liverpool, but so important has the business become that direct shipping facilities are sure to follow. The average freight on a bale of cotton from Alexandria to Boston is \$2.25.

The crop now undergoing its last picking—that of 1895-96—is the largest ever raised in Egypt and of fine quality. The previous season's area of about 1,100,000 acres was not added to, owing to low prices resulting from the enormous harvest in the United States, and during last June and July there was every indication that the plants would be ruined by worms.

An interesting piece of information in connection with the worm plague is reported from the State's domains farms. In one district of some thousands of acres, the plants were stripped of their leaves on account of the presence on their under side of innumerable eggs of the moth. It was feared these fields would not produce a crop worth picking. So far from this being the case, the yield of the affected area has been over 6 cwts. per acre, and the average over all the domains estates has been 5 cwts.

The first picking from these farms has been sold at \$14.75 per cwt., and throughout the country the crop is so abundant and prices so good that it is but natural to expect that next season will see vast tracts usually devoted to cereals planted with cotton. On the private estates of the Khedive, the crop now being gathered has been sold at a price netting \$65,000 more than the same area last year. Everybody has an abundance of money, and the planter, whether pasha or fellah, sees a short cut to wealth by way of the cotton fields. Another season may see a lower price, but it will be 2 cents a pound more than the United States quotation.

"Gilt-edge" cotton is supporting the Egyptian Government, paying the interest on the enormous debt owing to European creditors—in fact, doing more for the regeneration of the land of the Pharaohs than all other influences and agencies combined. It is tenfold more responsible for the present prosperity of Egypt than the British "occupation," and is bringing \$60,000,000 in ready money this season to a country that feeds itself and exports cereals enough to keep a million more people.

EGYPTIAN COTTON SEED.

Seven-eighths of Egypt's cotton seed goes to England, mostly to Hull. France is the only other country buying it in an industrial way, two or three factories at Marseilles using it in oil making. There are very few oil mills in Egypt. Zagazig, in the delta, has three or four small affairs with obsolete equipment, and Alexandria possesses an establishment of moderate capacity, using cotton oil in soap making. It is surprising that oil making is not more largely carried on in Egypt, it being a reasonable supposition that in freights alone the saving in sending the products of the seed to European markets would be enormous. From Alexandria, it is but a few hundred miles to southern European ports in the olive-growing region, where, it is alleged, American cotton oil is extensively used.

Egyptian seed is black and almost free from lint, and very rich, so much so that it sells for a fancy price—from \$20 to \$25 a ton. It would seem that two or three large mills, equipped with up-to-date American machinery and under American management, could not fail to prosper. Labor is plentiful, fairly intelligent, and costs much less than in America or England. The ginning establishments are well grouped in the delta, from 40 to 70 miles from Alexandria, and water transportation competes with railways everywhere.

FREDERIC C. PENFIELD,

Agent and Consul-General.

CAIRO, *November 20, 1895.*

ABOLITION OF SLAVERY IN EGYPT.

I have the honor to inform you that a new antislavery law will soon come into operation in Egypt, a convention to that end having been signed on the 21st instant by the Minister of Foreign Affairs, representing the Khedival Government, and the British diplomatic agent and consul-general. It is to go before the Legislative Council for approval, and becomes operative by decree of the Khedive.

This new convention will supplant that of August 4, 1877, which, a year or more ago, was found to be defective, inasmuch as it provided no penalty for the purchaser of a slave, but for the seller only. An Egyptian notable, Ali Pasha Cherif, at that time president of the Legislative Council, was tried for buying slaves for his household, but escaped punishment through a technicality of the law hitherto escaping notice.

Another provision of the new law is the abolition of trial by court-martial and the substitution of a civil court composed of native and European judges.

Under the existing regulations, every slave in the Egyptian dominions has the right to complete freedom, and may demand his certificate of manumission whenever he chooses. Thus, all domestic slaves, of whom there are thousands in Cairo, Alexandria, and the large towns, may call upon their masters to set them free. Many choose to remain in nominal bondage, preferring the certainty of food and shelter to the hardships and uncertainty of looking after themselves. Should the Soudan and equatorial provinces ever be retaken by Egypt, however, there will be hundreds of thousands of poor people to whom the advent of the Khedive's Government will be as the unlocking of the prison door to the captive.

FREDERIC C. PENFIELD,

Agent and Consul-General.

CAIRO, *November 26, 1895.*

THE HAWAIIAN COFFEE INDUSTRY.

I have the honor to transmit herewith an extract from the Pacific Commercial Advertiser of this date in relation to the coffee industry in the Hawaiian Islands. The Mr. Thrum mentioned in this article is the proprietor of Thrum's Annual, a well-known handbook of statistical information.

ELLIS MILLS,

Consul-General.

HONOLULU, *December 18, 1895.*

[Inclosure in Consul-General Mills's report.]

Thanks to the courtesy of Mr. T. G. Thrum, we are enabled to give our readers the latest statistics with regard to coffee growing on these islands. There are in all, according to the best estimates, 4,806 acres under coffee cultivation in the various districts at the present time. This is divided as follows: Newly cleared land, 777 acres; land newly planted, 1,484 acres; land having trees from 1 to 3 years old, 1,882 acres; and land having plants in full bearing, 663 acres. These are most important statistics. They give us a bright outlook for the future.

In the Olaa district there are fifty plantations, the largest among these being that of the Kona Coffee and Commercial Company—a misleading name to some, for this company has nothing to do with the district of Kona. This company has 50 acres of newly cleared land, 75 acres of newly planted, and 75 acres with plants from 1 to 3 years old. Mrs. Hattie Lewis has 30 acres newly cleared, 50 acres newly planted, and 30 acres with trees from 1 to 3 years. The Konas report 34 plantations. Of these the Hawaiian Coffee and Tea Company easily stands first, with 30 acres newly planted, 147 acres with trees from 1 to 3 years, and 3,000 trees in bearing; J. Monsarrat follows, with 70 acres newly planted, 60 acres of

young trees, and 10,000 trees in bearing, while the McStocker Company have 20 acres newly cleared, 50 acres newly planted, 70,000 young trees, and 8,000 trees bearing. Hamakua, Puna, and Laupahoehoe, North Hilo, all show up well in these statistics. Oahu has only three small plantations; Maui reports one—W. Y. Horner's, of Honckowai, Lahaina district. This has 50 acres newly planted and 100 acres with young trees.

It is by no means an overestimate to say that in four or five years from the present time the income from the coffee plantations will be close on to half a million dollars. This sum will not go into the pockets of capitalists alone, but will be divided among men of small means who have invested their modest savings in the industry. Coffee has a splendid future before it.

MONAZITE IN BRAZIL.*

I have the honor to submit herewith a translation of a letter from the director of the School of Mines, at Ouro Preto, the capital of Minas Geraes, which gives some valuable information concerning monazite. As will be seen by the analysis, which shows the percentage of the different component parts of the Brazilian monazite, not even the element of thorium is encountered.

HENRY C. SMITH,
Consul.

SANTOS, *August 17, 1895.*

DIRECTOR MIDRADOS TO CONSUL SMITH.

OFFICE OF DIRECTOR, SCHOOL OF MINES,
Ouro Preto, July 26, 1895.

Consul HENRY C. SMITH.

SIR: In reply to your letter of June 15, I herewith transmit you all the information that I am able to furnish about monazite in Brazil.

This mineral is encountered in alluvial deposits in the precincts of Caravellas, near the sea coast, in the State of Bahia. I am unable to tell you anything positively about the extent of the workings of these deposits or of their commercial value, but I am told that monaziferous sand is exported in large quantities to Germany.

Monazite is also found in the neighborhood of Prado, in the same State, and in Corrego das Varas, near Diamantina, State of Minas Geraes, samples of which I send you. Here is the result of an analysis made in this school by Professor Gorceic of the monazite from Caravellas:

SiO ₃	13.4
ZrO ₂	16.3
CaO.....	1.1
PhO ₃	25.7
CeO.....	28
DiO+(LaO?).....	35.8
Total.....	100.3

* Previous reports on monazite printed in CONSULAR REPORTS No. 179 pp. 541-551, and in No. 181, p. 241.

† Parts not attacked by sulphuric acid.

Monazite is found, also, in the auriferous sand of Casca River, an affluent of Rio Doce, a sample of which I am unable to furnish you. Its analysis, made in this school, gives the following result :

PhO ₅	31.5
CeO.....	36.8
DiO+LaO.....	31.5
Total (parts).....	99.8

This analysis only refers to parts attacked by sulphuric acid.

As it might interest you to know that xenotime exists in Brazil, I send you a sample of this mineral, taken from the sand of Datts, near Diamantina, Minas Geraes. The result of three analyses made in this school is as follows :

Elements.	First.	Second.	Third.
PhO ₅	35.64	35.9	35.6
YtO+ErO.....	63.75	64.1	62.6
Remainder insoluble.....	0.4	0.6	0.86
Total.....	99.79	100.6	99.06

Always at your disposition, and with my high esteem and consideration,

I am, etc.,

A. MIDRADOS.

THE LOFOTEN COD FISHERIES.

The report of these fisheries for 1895, made by the official inspector, C. Knap, commander in the Norwegian navy, to the Norwegian Department of the Interior has recently been published. The following items of said report may be of interest :

The inspection was carried on from January 16 to April 27, and consisted of 10 superintendents, 2 supervisors, 2 mates, 22 sailors, and an inspector's assistant. Seven physicians attended during the fishing season.

The number of fines imposed and agreed to this year was very large, namely 319; one-third for starting too early with the boats, or setting the fishing tackle too late; 27 fines were passed for illegal dealings in spirits, and 91 for illegal sale of other goods.

During the season 6,470 sick persons were treated in the districts of the inspection, and 1,070 outside of these. The total number of deaths was 20.

The number of fishermen participating in the catch amounted to 37,200—the largest since 1886; the percentage of sick persons was 17.4 per cent, as against 19 per cent in 1894.

On the 16th of March, 1895, 32,492 fishermen and 3,246 hired workmen were present in Lofoten, divided into 7,510 boats' crews and 7,693 boats. Of the total number, 8,540 fishermen, with 1,516 boats, were engaged in net fishing; 21,663 men, with 5,432 boats, in line fishing; and 2,289 men, with 467 boats, in deep-sea fishing.

At the different fishing places there were 2,686 booths and 282 lodging-houses, accommodating 38,121 men.

From the different telegraph stations in Lofoten, 105,475 telegrams were forwarded during the fishing season, which is 12,480 telegrams more than in the preceding year, notwithstanding the lively correspondence by the many private telephone lines now existing in Lofoten.

Among the list of tradespeople present during the fisheries are found 21 watchmakers, 20 photographers, 30 eating-house keepers and 11 quacks. The number of the latter was only 5 in 1894.

During the season there were 82 fishing days in East Lofoten and 79 in West Lofoten, 35 and 39 days respectively, when the men, on account of bad weather, were prevented from fishing. Upon the whole the weather was very favorable for fishing in 1895.

There were 16 boats wrecked, with a loss of 27 fishermen in all.

The final returns were 38,600,000 codfish, 11,000 hectoliters of liver, 42,000 hectoliters of fish roe, and 12,300 hectoliters of medicinal steam-refined cod-liver oil.

Of the quantity of codfish caught, about 31,400,000 were salted, and the rest dried as stockfish.

The codfish heads gathered numbered 35,000,000, whereof 29,000,000 were used in the manufacture of guano, and 6,000,000 for feeding cattle.

The total value of the catch is estimated at 6,900,000 crowns (\$1,849,200).

The average for each fisherman was 1,184 fish, valued at 212 crowns (\$56.82). In 1894, each fisherman made 250 crowns (\$67), otherwise the catch of 1895 was the largest since 1880.

The total loss of fishing tackle is estimated at \$34,840.

J. C. ISDAHL, JR.,
Vice-Consul.

BERGEN, *December 16, 1895.*

COFFEE IN BRITISH CENTRAL AFRICA.

I have the honor to transmit to the Department herewith an article written by a coffee planter and published in the Zanzibar Gazette, which gives a very good description of the present state and prospects of the coffee industry in British Central Africa.

W. STANLEY HOLLIS,
Consul.

MOZAMBIQUE, *November 20, 1895.*

NYASSALAND AND ITS RESOURCES.

Coffee planting, although still in its infancy, may be looked upon as the chief cause and support of our prosperity in central Africa. Nyassaland coffee last year fetched the highest

price in the London market. The prospects of coffee planting in British central Africa are excellent at present, and the industry will have a great future when more capital has found its way into the country. Even now, compared with coffee planting in India, its cultivation in Nyassaland offers advantages to the planter. The conditions of the country would seem to be admirably suited to coffee. There is an abundance of running water in all the coffee districts; this is an absolute necessity for the washing process. The fertile slopes of the Shire Highlands and Mlange are covered with a rich soil, which contains every element necessary for the healthy growth of the plant, and as yet the coffee disease has not made its way into the interior, although it has appeared on the coast of German East Africa and in Natal.

The greatest advantage of coffee planting in central Africa is the abundance of cheap local labor. Plantation work is very popular with the natives who live in the neighborhood of coffee estates, while now that the country is quiet, people will come on foot for hundreds of miles to obtain work. Under their "capitaos" or native "maestries," many of whom come from a curious little colony of Mohammedans on the lake, the coolies are admirable workers, steady, willing, industrious, and extremely cheap, 3s. 6d., a month being the cost of each adult male coolie to the planter. Land, of course, is excessively cheap, and a plantation cleared in May is planted the following December, the planter getting his first crops at the beginning of the third year, while in the fourth he may reasonably hope for a large return for his outlay.

At present only the washing and pulping is done in the country, as there is no machinery for peeling and garbling in central Africa, but some energetic planters have already set on foot plans for importing all the necessary machinery, which will shortly be established at Torona. At present the portorage is the difficulty. Parts of the Shire above Chiromo are unnavigable, and now the whole of the exports and imports of central Africa are carried on the heads of native porters, some 10,000 natives being engaged in the transport of goods. They are, however, difficult to obtain though cheap.

The great want of the coffee planter is a railway from Chiromo to Blantyre, and it is easy to understand that those who have had the fruits of years of waiting and toil, detained perhaps for six months on the Shire bank waiting for coolies, would gladly pay double to insure their safe and speedy transport by rail. It is, in fact, a matter of life and death to the planter to get his produce out of the country before the heavy rains set in in November. It will, however, not be long before this dream is realized, as a company has already been formed and a railway will shortly be laid down from Chiromo to Blantyre, which it is hoped will soon be extended to Matope, higher up the river.

The Shire Highlands, with Blantyre and the Mlange districts, are at present the chief seats of coffee planting, and both are admirably adapted for colonization, these districts being over 5,000 feet, while parts of Mlange reach 10,000 feet. The Upper Mlange plateau is very wet, with a rainfall of nearly 75 inches, otherwise the climate is perfection as regards temperature, and very bracing. The southwest plateau has the making of an ideal sanitarium. Its clear air and exhilarating climate would give new life to the visitor from the heated plains, and its acres of rolling grass land afford excellent pasturage for horses, cattle, and sheep, which thrive there. Many European vegetables will grow there. It would, in short, be a favored hill station, which would eclipse any in India, except, perhaps, Ootacamund, surrounded, as it would be, by breezy downs, with a splendid natural race course and polo ground, all these advantages being obtainable within two days of Blantyre.

There are, however, some difficulties to be overcome as regards central African coffee planting. The coffee shrub, although a native of Africa, is not found wild in Nyassaland and does not grow there yet as it should, and as it grows in Ceylon. In central Africa the tree at its first bearing produces an enormous crop of berries on the horizontal branches, but these then die off, and the tree, though it increases in height, bears very little more. It is then cut down, and at least two years must ensue before the new shoots make their appearance on the old roots. It is hoped, however, that by some new process of pruning or manuring, the coffee tree may in time give secondary branches which would rapidly increase the

profits. The Nyassaland coffee, strange to say, was introduced into the country from Scotland by Mr. Buchanan, C. M. G., who brought a small plant from the botanical gardens at Edinburgh. From this plant, which is still in existence in the mission grounds at Blantyre, all the trees in Nyassaland are descended.

There are, of course, at present very few so-called townships in Nyassaland. These are Chiromo, on the Shiré Blantyre, the capital of the Shiré Highlands; Fort Herald, Fort Johnson, and Fort Lister. Of these, Blantyre is the most advanced. It is a picturesque little settlement of some thirty European houses, in the center of the coffee-planting district, surrounded by plantations, beautifully situated beneath the hills in a well-wooded country. The climate is remarkably healthy.

LAS PRIETAS MINERAL REGION.

I have the honor to transmit herewith an English translation from the Nogales (Ariz.) Oasis, of an interesting sketch from a Mexican newspaper of the mineral region of Las Prietas, in this consular district, which, as is stated therein, "intelligent miners, native and foreign," regard as "one of the most important mining regions of the entire world."

FRANK W. ROBERTS,

Consul.

NOGALES, *December 28, 1895.*

MINERAL DISTRICT OF LAS PRIETAS, SONORA, MEXICO.

It was toward the middle of the last century, about the year 1743, when, according to reliable accounts, the existence of rich deposits of gold in this most important region of our State became known, the mines Sierritas, Verde, Agua, and Colorado being then discovered and worked by Jesuit missionaries, who established at that time the real of Aigame, as the nearest point to water for the treatment of the ores, which they took out in large quantities from said mines, until the persistent molestation of the Pima and Seri tribes compelled them to abandon the district. Afterwards, in 1790, miners from Aigame and Las Placitas exploited, for eight or ten years, with good results, the mines Prietas, Verde, and others; but some of them becoming flooded and others abandoned, they all remained at the mercy of the chloriders, who many years worked them after their own fashion without greater advantage.

The importance of these mines was revealed solely by observing the magnitude of the ancient workings, the large number of arrastras, the immense dumps of tailings, and the ruins of large buildings, which still are to be seen at said points, Aigame and Las Placitas, known at that time as the "Real de Candelaria."

The mines being abandoned for the space of many years, the active and expert miner, Don Ricardo Johnson, more practical, but less fortunate, denounced the known group of Minas Prietas, under the denominations of San Juan, Delfina, Amparo, Florencia, and Creston, and for some years, under the protection of the house of Ortiz Bros., of Hermosillo, worked them with prosperous or adverse fortune, until he sold the first four for \$150,000 to a rich North American company, which immediately began to work them systematically, establishing large reduction works at a cost of more than \$300,000, and in a short time took out many millions of dollars until 1891, when the interior works being carelessly destroyed by fire and the company being aware that the value of the ore had decreased, it was content to

nominally preserve its property in said mines, without undertaking any new work upon them, such as was necessary to put them in paying condition. Subsequently they have been purchased by the Creston-Colorado Mining Company.

The works undertaken by said North American company were to open interior communication between the two mother veins, of which the said four claims are composed, and which run parallel from east to west with an inclination of 80° to 85° , by means of a vertical shaft between the two veins to a depth of 800 feet, from which shaft start crosscuts or tunnels at every 100 feet. The thickness of the first vein is 80 feet and of the second 17 feet, with stringers of pay ore of different dimensions and an assay value of 15 ounces of gold and 10 of silver per ton. Intelligent experts are of the opinion that these mines are not sufficiently exploited, and that they are susceptible of producing a great fortune.

In 1886, Messrs. Chamberlain and Price,* whose heirs now form the Creston-Colorado Mining Company, bought of Mr. Johnson the Creston mine, which may be considered as the extension of Minas Prietas, together with the Santa Cruz and Colorado, for the sum of \$200,000. He afterwards received \$500,000 in gold by way of compromise in a lawsuit he brought against said gentlemen, which gentlemen, as I have said, are now the actual holders of the principal mines of the place. The works undertaken up to the present time in these rich properties are: In the Creston, a vertical shaft which now reaches the 980-foot level, with galleries at every 100 feet, the thickness of the veins and the value of the ores being similar to those of Minas Prietas; in the Santa Cruz, the works consist solely of a vertical prospecting shaft which barely reaches 200 feet; and in the Colorado an inclined shaft that measures from 800 to 900 feet on the foot wall or bed of the vein, with three levels with galleries, the first 1,100 feet, the second 900, and the third 400, with several shafts or productive works. The thickness of the vein is 6 to 8 feet, with an average value of \$200 per ton, both the Creston and Colorado having powerful hoisting machinery for raising their ores, which are treated in the Prietas mill lately remodeled, and in another no less large erected on the "Colorado claim." The management of all these works is intrusted to truly expert hands, for the present superintendent, Mr. Howell Hines, is giving this great enterprise all the push it demands, and under skillful administration the company has earned many millions of dollars.

The important mines—Amarillas, Verde, and Grand Central—are also no less rich properties belonging to diverse owners, in which systematic work has been undertaken and powerful machinery erected for treating their ores.

There are besides new mines belonging to the Union Mining Company—seventeen in number—covering an area of 4 leagues in circumference, in which extensive prospecting work has been done with good results. Blanca Julia and Fortuna are two prospecting shafts that now reach the depth of 150 and 200 feet with good hoisting machinery.

They are being opened by a Mexican company for the purpose of cutting the principal veins that cross the district from east to west in that section and the now very important mine—La Patria—which, from a single prospect, has become a rich mine with a promising future, the ores of which pay a value of \$100 gold per ton.

The prospect shaft known as Zaragoza, with a depth of 200 feet, is worthy of being mentioned on account of its promising future.

Intelligent miners, native and foreign, agree that this is one of the most important mining regions of the entire world. Many good miners, guarded by the mystery of traditional richness, awaken the cupidity of men of enterprise, who do not hesitate to risk their capital in truly colossal works of exploration, or in new discoveries in this favored region.

The satisfactory outcome of some of these discoveries has led to the formation of mutual companies dedicated exclusively to the development of mines.

The notable progress of the towns of Minas Prietas and La Colorado, their constant activity, the great and constant influx of people, who arrive day by day in search of work or

* Americans from the State of Ohio.

transactions of some other kind, the very expensive installations of machinery completed in a relatively short time and others projected, prove in a striking manner that the star of progress makes its powerful influence felt by shedding everywhere its vivifying rays and making us prophesy that the day is not far distant when this rich portion of our country will be the emporium of a great mining and commercial center.

SAFETY IN CAISSON WORK.

The building of bridges, where the foundation for pillars has to be laid under the water, has always been accompanied with much danger to the lives of workmen who are compelled to work in caissons. Investigations by Rameaux, and more especially by Paul Bert, have fully demonstrated why air compressed beyond a certain degree is dangerous to animal organism.

Dr. Neudorfer, an Austrian authority, suggests various methods for obviating these dangers, and has made a scientific study of the subject. There are two things that the workers in caissons have to guard against:

(1) The concentrated oxygen, which, at a pressure of 5 atmospheres, affects the nervous system injuriously, causing cramps tetanus, diminishing oxidation, and the formation of carbonic acid gas. It has been proven by experiments on men and animals that when there is an increase of 20 per cent in the amount of oxygen, the process of oxidation in the body is less rapid, less carbonic acid gas is formed, and the heat of the body is diminished. This first danger is the least serious, as the pneumatic pump causes a gradual compression of oxygen to which the system generally adapts itself, and in any case there are premonitory symptoms which make it possible to remove the workmen before the case becomes dangerous. Little inconvenience is caused until the pressure exceeds 4 atmospheres.

(2) The concentration of nitrogen, which affects the blood instead of the nervous system. With the increase of pressure, the nitrogen becomes more and more concentrated and the absorption of this gas by the blood increases proportionately, when a decrease in the atmospheric pressure absorbs a smaller quantity of nitrogen, allows the gas to escape in fine bubbles which circulates through the veins and prevents the blood, by its expansion, from circulating in the capillary vein. This checks the flow of arterial blood and affects the spinal column and the brain. In experimenting with animals, death is caused instantaneously when a high pressure is suddenly reduced. The best method for obviating this danger is to reduce the pressure slowly so that the blood can get rid of the free nitrogen gradually. At the entrance to the caisson there should be a separate compartment filled with compressed air. When the workman desires to leave his work he should shut himself in this compartment and gradually reduce the pressure by letting the compressed air escape.

According to the opinion of Dr. Neudorfer, of Vienna, an hour and a quarter should be spent in reducing the pressure of $3\frac{1}{2}$ atmospheres in order

that the risk may be as small as possible. The decrease of pressure is regulated according to the regulator of Denayrouze.

In cases where, in spite of all precautions, a workman is affected, inhalations of pure oxygen are found to be the most simple and effective remedy.

MAX. JUDD,
Consul-General.

VIENNA, *October 3, 1865.*

AMERICAN WHEAT FOR NEW CALEDONIA.

I have the honor to inclose herewith a demand from the Minoterie Calédonienne (Nouméa Flour Mills) for wheat from California or other parts of the United States. If terms can be arranged, the business may become important, for the Minoterie has a contract with this colony's government for the supply of flour for ten years.

Vessels coming to Nouméa could get freight from this place to Sydney in the shape of chrome, cobalt, or nickel ore, and from New South Wales coal to go back to the United States.

L. LE MESCAM,
Vice-Commercial Agent.

NOUMÉA, *November 22, 1895.*

THE MINOTERIE TO VICE-COMMERCIAL AGENT LE MESCAM.

NOUMÉA, *November 16, 1895.*

Mr. L. LE MESCAM, *United States Consul.*

DEAR SIR: You are aware we are working a flour mill here for the purpose of supplying all Government requirements of breadstuffs, for which purpose we have a long contract.

We are now using from 300 to 400 tons of wheat per month, and have been obtaining our supplies from South Australia and Victoria.

A sample of wheat from San Francisco called "best milling wheat" was handed to us in Sydney, and if wheat of a similar quality could be guaranteed, other conditions being favorable, we could handle that wheat here.

In the event of San Francisco wheat being landed here at lower rates than Australian, we could increase our demand to 500 or 600 tons.

We could receive wheat in parcels of from 700 to 1,100 tons, the lower quantity preferred, and we have already been quoted San Francisco wheat, c. i. f. Nouméa by sailer, payable by draft on Sydney at 60 days.

We shall be pleased to entertain business with San Francisco for wheat on the above terms, and trust that as a result of this correspondence, quotations and samples will come to hand.

All vessels coming here have an opportunity of proceeding to Newcastle and loading coal for San Francisco, where Australian coal finds a ready market, but no doubt you will show all the openings that would justify this trade.

Yours faithfully,

WILLIAM E. MORGAN.

ISTHMUS OF PANAMA TRAFFIC.

During the last five years—from July 1, 1891, to July 1, 1895—the total number of steamers calling at this port and clearing from it, exclusive of men-of-war, was 863; also 15 sailing vessels, exclusive of small Colombian craft. The nationalities of all these for the respective years were:

Year.	Steamers.					Sailing vessels.				
	Ameri- can.	English.	Chilean.	Ger- man.	Total.	Ameri- can.	English.	Peru- vian.	Ecu- dorean.	Total.
1890-91.....	55	72	23	.....	150	.....	2	.....	.....	2
1891-92.....	64	72	16	.....	152	.....	.....	.....	1	1
1892-93.....	77	64	25	2	168	1	1	1	1	4
1893-94.....	79	88	26	6	199	.....	3	.....	.....	3
1894-95.....	81	88	25	.....	194	.....	3	2	.....	5
Total.....	356	384	115	8	863	1	9	3	2	15

The several lines of steamers doing business at this port are the Pacific Mail Steamship Company, Panama Railroad Steamship Company, South American Steamship Company, and the Pacific Steam Navigation Company. The first two lines are American, the third Chilean, and the fourth English. The German steamers coming here are "tramps" after a job, if they can find one, which they seldom do. The four regular lines of steamers mentioned have their regular schedule time for sailing, as shown by my report on "Highways of Commerce," under date of June 11, 1894. The above table shows a small but steady increase of American steamers, and they carry twice as much freight as all the rest coming here; and if the arrivals of American steamers are somewhat smaller than the arrivals of English steamers, it is due to three small English vessels going from here along the coast at short distances, thus calling and clearing more frequently. In five years the arrivals of American steamers have increased from 55 to 81, or 26, while the arrivals of English steamers in the same time have increased from 72 to 84, or only 12. All the vessels that have called have cleared.

As to the traffic across the Isthmus, owing to the several lines of steamers above mentioned, as also to the steamers calling at Colon, at the other end of the Isthmus, I submit the following table:

Year.	Transit from Panama to Colon.	Transit from Colon to Panama.	Colon to Panama for local use.	Total.
	<i>Packages.</i>	<i>Packages.</i>	<i>Packages.</i>	<i>Packages.</i>
1890-91.....	1,165,700	915,553	25,521	2,106,774
1891-92.....	1,184,754	919,830	14,488	2,119,072
1892-93.....	1,519,608	882,968	21,587	2,424,163
1893-94.....	1,479,322	912,789	35,268	2,427,379
1894-95.....	1,555,186	1,012,489	20,812	2,588,487
Total.....	6,904,570	4,643,629	117,676	11,665,875

The figures given in this table are official; I have taken them from the books of the collector at this port. They do not indicate pounds, but "bultos" (packages). The manifests all say so many "packages" of this or so many "packages" of that. A sack of coffee is a package, so is a barrel of flour, a piano, and everything else, and by comparison of the number of packages with the number of tons of freight carried annually, as indicated by the records of the Panama Railroad, a "bulto," or package, averages 169 pounds. Hence, in five years the Panama Railroad transit business amounted to 985,767 tons, or 636 tons per day for each working day during that time, freight trains not moving on Sunday. The heaviest months for the moving of freight are December, January, February, March, and April, when the coffee crop moves. During the last fiscal year there were some 800,000 sacks carried over the road, which is 200,000 sacks more than ever before during the same period. In my computations, all the freight from all parts of the world is included.

The following table shows the movement of treasure, the weight of which is included in the tonnage above given:

Year.	In transit, Panama to Colon.	In transit, Colon to Panama.	Total.
1890-91.....	\$4,614,978	\$1,987,102	\$6,602,080
1891-92.....	6,899,488	1,737,923	8,637,411
1892-93.....	5,259,298	921,360	6,180,658
1893-94.....	4,780,760	3,392,738	8,173,498
1894-95.....	4,602,375	3,009,674	7,812,049
Total.....	26,156,899	11,248,797	37,405,696

These figures represent nearly altogether Mexican, Central American, and South American silver dollars. The weight of one thousand such dollars being 55 pounds, the total tonnage of treasure carried in transit during the last five years amounts to 18,703 tons. Independent of this, \$20,000 per month on an average is received at this place for local use, a portion of which is American gold.

I am told by a reliable authority that the silver sent in transit from the Pacific coast to other parts of the world is not only for the purpose of paying bills, but also for speculative purposes. If the holders of silver can secure more for their silver, in gold, by having it reminted in the United States, they sell. The Mexican dollar plays quite a part in this speculative traffic. The above table shows that \$14,908,102 have never returned to the original owners.

The freight destined for local use at Colon during the five years amounts to 117,676 "bultos," or 10,399 tons. It comes from Europe, stopping at Colon, and does not belong to the transit business. The freight destined for local use at Panama from Europe and the United States, but landed at Colon, really does not belong to the transit business, but, nevertheless, as it is carried from Colon to Panama over the road, I have included the total

amount of such freight in the table of transit business. Besides all this, there is the banana traffic, which I do not speak of, for the reason that only a few stations of the Panama Railroad on the Atlantic slope, near to Colon, furnish the fruit. It is safe to estimate this traffic—and it all goes to the United States—at 150 tons per week, with the promise of an immense increase, as new plantations are constantly made.

The transit business could be made much larger if the rates of the Panama Railroad were arranged to suit shippers on the Pacific coast. Rates are high, and a great deal of coffee is taken from Central America by German steamers going around the Horn direct to Hamburg and Havre; so are valuable timbers taken to Italy and England, and wheat and barley from California. It is generally conceded that the Panama Railroad has seen its best days in the transit business, although the transit has increased yearly during the last five years. The fight between the Panama Railroad and the Pacific Mail Steamship Company has caused much loss to the cash value of the transit business, but the increase of acreage in coffee lands has been so great in Central America that notwithstanding the fight between the two corporations, the increase in the transit could not be held down, even though there may have been a reduction in the cash receipts. I am told that the Pacific Mail Steamship Company's steamers in the Pacific have taken much coffee to San Francisco, to be reshipped there on the Southern Pacific Railroad for New Orleans, where it is reshipped to Europe. Then, too, there is the railroad being built from the city of Guatemala to Puerto Barrios, Gulf of Honduras, which, it is said, will be completed within three years. This line once built, the Pacific Mail Steamship Company (this new road being controlled by Mr. C. P. Huntington), will be able to do very much as it pleases in spite of the Panama Railroad and the future Tehuantepec line.

The Panama Railroad has been a gold mine to its owners, and is likely to remain one, even though, through the possible construction of the Panama Canal, it may cease to be the one great factor of the world's transit business across the isthmus.

Steps are being taken to make a harbor at the mouth of the canal, where vessels of all sizes will be enabled to come along the wharves and have their cargoes unloaded direct on the railroad cars. Over six hundred men are at work there now, and three large dredges are scooping away at the rate of some 2,000 cubic meters per day. One thousand more men will be put to work there in the dry season, and I am informed by the engineer in charge that within two years this harbor will be completed. This, of course, will greatly facilitate the traffic, inasmuch as at present all vessels have their cargoes discharged into lighters, some 4 miles away from the railroad, and this lighterage business is a very expensive affair to shippers.

The French, therefore, are determined to have a complete railroad, with good harbors, on each side of the isthmus, even though the canal should prove to be an impossibility. On the other hand, if the canal is not an impossibility, the railroad will still do an immense local traffic through the development of the very richest agricultural lands on the globe.

Under a foreign ownership and a foreign management, the American corporation known as the Panama Railroad will continue to thrive, whether there be a canal or not, greatly to the detriment of American interests, commercial and international, inasmuch as European tendencies seem to be determined to undermine United States interests in this part of the world. My firm belief is that there will be a canal built within the next decade.

Before closing, I wish to state that the Panama Railroad officials have just forwarded me the tonnage figures for the first six months of this year, and they amount to 138,635 tons, and they tell me, also, that the transit for July, August, and September is larger than ever before.

VICTOR VIFQUAIN,
Consul-General.

PANAMA, *October 23, 1895.*

Following is a statement showing the number of tons of freight transported across the Isthmus of Panama by the Panama Railroad during the years 1890 to 1894, inclusive: In 1890, 231,523; 1891, 224,560; 1892, 215,905; 1893, 200,082; 1894, 216,676.

The following shows the number of passengers on the Panama Railroad during the same period: In 1890, 64,652; 1891, 56,276; 1892, 49,446; 1893, 42,018; 1894, 44,805.

The only method of transportation across the Isthmus is the Panama Railroad. The traffic on this road has been gradually decreasing ever since the stopping of work on the Panama Canal. It is now increasing somewhat.

Vessels entered and cleared at the port of Colon.

[illegible]

Vessels entered and cleared at the port of Colon—Continued.

Nationality.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1892—Continued.													
Sailing vessels:													
English.....		3	3	4	2	5	2	4	2	4	1	2	31
American.....	1	4	5	2	2			1	1		1	3	20
Total.....	22	28	35	30	27	24	21	25	17	17	24	25	265
1893.													
Steamships:													
English.....	13	8	13	11	12	12	8	11	14	9	11	9	131
American.....	3	5	4	5	4	5	3	4	4	3	3	3	46
French.....	3	3	3	3	3	3	3	3	3	3	4	3	37
Spanish.....	1	1	1	2		1		1	1	1	1	1	11
German.....	1	5	3	3	2	5	3	2	4	2	2	4	36
Norwegian.....	1	4	4	2								1	12
Colombian.....				1	1		1	1					4
Sailing vessels:													
English.....	5	1	2	2	1	2			1				14
American.....	1	2	1	1	2			1					8
Total.....	28	29	31	30	25	28	18	23	27	18	21	21	299
1894.													
Steamships:													
English.....	13	10	11	10	11	10	9	10	12	11	9	10	126
American.....	3	3	3	3	3	3	4	6	5	5	5	5	48
French.....	3	3	4	3	3	3	3	3	3	3	3	3	37
German.....	4	3	3	3	3	4	3	5	3	4	3	3	41
Spanish.....	1	1	1	1	1	1	1	1	1	1	1	1	12
Norwegian.....					1						2		3
Italian.....		1	1	1	1	1	1	1	1	1	1	1	11
Sailing vessels:													
English.....	1			1		1	1	1				1	6
American.....			1										1
Total.....	25	21	24	22	23	23	22	27	25	25	24	24	285
1895.													
Steamships:													
English.....	13	15	14	14	17	12	12	15	12	13			137
American.....	5	5	6	5	5	6	7	6	6	6			57
French.....	2	3	4	4	4	4	4	4	4	3			36
German.....	2	5	4	5	4	2	2	2	2	1			29
Colombian.....	1					1							2
Spanish.....	1	1	1	1	1	1	1	1	1	1			10
Norwegian.....			4	4	2	2	2	2	2	3			21
Italian.....	1	1	1	1	1	1	1	1	1	1			10
Sailing vessels:													
English.....		1		1		1	1	2	1				7
American.....	1	1		1	1	1							5
Holland.....						1							1
Total.....	26	32	34	36	35	32	30	33	29	28			315

J. L. PEARCY, JR.,
Vice and Deputy Consul.

COLON, November 16, 1895.

SUEZ CANAL TRAFFIC IN 1895.

Although the number of ships passing through the Suez Canal in 1895 was 18 less than for the preceding twelvemonth, the year 1895 was the most fruitful in receipts the canal company ever experienced. This is explained by the special traffic caused by the Chino-Japanese war and the Madagascar and Abyssinian campaigns. The falling off in tonnage receipts was more than made good, naturally by the tax on troops of Italy, France, Russia, and England, going or coming.

As usual, Great Britain was the principal user of the great waterway, but it is a significant fact that, in 1895, she had 64 fewer vessels than in the previous year, while Germany—making a determined fight for trade in the Orient—had 18 more; and it can not be assumed that the increase of French traffic (184 vessels in 1894 and 274 in 1895) was alone explained by military operations in Madagascar and the East.

The detailed record of the traffic in 1895 follows:

Nationality.	Steamers.	Net tonnage.	Traffic receipts.
American*.....	4	2,340.79	\$3,259
Austrian.....	72	166,426.74	298,456
British.....	5,330	6,087,302.56	11,105,484
Chinese.....	2	483.94	879
Danish.....	1	863.52	1,554
Dutch.....	188	355,637.22	655,267
French.....	274	664,388	1,121,726
German.....	312	690,259.98	1,262,079
Italian.....	78	146,161.24	284,755
Japanese.....	2	2,354.73	4,238
Norwegian.....	56	105,993.06	191,954
Portuguese.....	3	3,520.16	7,682
Russian.....	39	95,567.59	191,954
Spanish.....	33	87,157.04	181,727
Swedish.....	2	2,271.14	4,098
Turkish.....	35	34,204.72	106,288
Egyptian.....	3	3,253.4	10,348
Total.....	3,434	8,448,245.83	15,631,748

* Warships and yachts.

FREDERIC C. PENFIELD,
Agent and Consul-General.

CAIRO, January 18, 1896.

RAILROAD ENTERPRISES IN CHINA.

I have the honor to inclose herewith a decree translated from the Peking Gazette, of the 6th instant, placing the construction of the railroad from Tientsin to Lu Kou Bridge, 8 miles west of Peking, in the hands of Hu Chü-fen, a native of Kwangri province, holding the rank of provincial judge.

This Mr. Hu, who has had some experience with the Tientsin railroad, is known as a protégé of Prince Kung.

The cost of the 216 li (approximately 70 miles) of line, is stated in the decree to be 2,400,000 taels (about \$2,000,000 United States currency), or more than \$28,000 per mile. An American engineer recently estimated the cost of this line at \$20,000 per mile, with rolling stock and equipment complete. The proposed route presents no difficulties except the necessity of high embankments and numerous drains and culverts in certain localities to cope with annual floods.

It is understood that Mr. Hu's instructions are to employ no foreign capital whatever. He is said to have already 4,000,000 taels at his command, and it is said he proposes to finish the line within a year.

That part of the decree that orders merchants to form stock companies for railroad building, outlines the present railroad policy of China. There is a strong determination on the part of the Government to exclude foreign capital and foreign control. There is reason to believe, however, that this determination will give way before the magnitude of the undertaking, which will bring to light the inexperience of the Chinese managers. There will then be a great field open here to foreign railroad enterprise.

This field has already attracted great attention, and it will doubtless be eagerly disputed by the representatives of the railroad interests of various nationalities. I have not failed on all proper occasions to urge on the Chinese authorities the preeminence of Americans in railroad construction, and in the manufacture of all those products which China's railroad system will in time require. It would be much to be regretted should this market be allowed to pass without an effort into the hands of others.

The termination of the line at Lu Kou Bridge, 8 miles west of Peking, is in deference to a sentiment on the part of the Chinese that the sacred precincts of the imperial residence must be prevented from contamination by too close contact with such western improvements. This sentiment will doubtless soon disappear, and it is probable that before many years the locomotive will be running beneath the walls of Peking.

CHARLES DENBY,
Minister.

PEKING, *December 5, 1895.*

IMPERIAL DECREE OF DECEMBER 6, 1895.

The princes and ministers in charge of the bureau of military affairs have memorialized us asking that some high official be appointed to take charge of railroad construction.

Railroads are important to commerce and beneficial to the laboring classes. This Government having determined upon their construction, it is desirable that the work be undertaken. Sometime ago, we ordered the princes and ministers to first take into consideration the means of building lines in the vicinity of the capital. They selected Hu Chū-fen, a provin-

cial judge of Kwangri, to make a survey of the ground, and we are now in receipt of a memorial from them. They report that a line starting from Tientsin, following the curves of the Yun River along its western bank northwards and making a circuit around the southern park to the Lu Kou Bridge, would be 216 li long (1 li=1,894.12 feet), and it is estimated that it would cost 2,400,000 taels. They submit a map of the line, with explanations, and they request that an official be designated to undertake its construction.

It is difficult to determine what to do at the inception of a new enterprise. It is important not to distrust those whom one employs. Hu Chü-fen, in the first place, laid before us the details of this undertaking, and subsequently he repeatedly went over the ground in person. Let him now have sole charge of the construction of the line from Tientsin to Peking. Let the board of revenue and the minister superintendent of northern trade jointly take steps to provide the necessary funds.

As to the trunk line from Lu Kou Bridge to Hankow, the route is long and the cost would be great. If there are wealthy merchants in the provinces who can collect together the sum of 10,000,000 taels or more, let them be permitted to establish companies, and with earnest effort undertake railroad construction. The business shall be in the hands of merchants exclusively, and there shall be no official interest in their profits or their losses. If, however, meritorious results of their efforts are manifested, they shall receive recognition of their services.

Let this decree be published abroad for the general information.

The North China Herald, dated Shanghai, January 10, 1896, gives the following account of the Peking-Hankow Railway:

A couple of Cantonese gentlemen living in Shanghai, members of a powerful syndicate whose aim is to tender for the construction of the Peking-Hankow Railway, have received telegraphic notice of the safe arrival at Peking of several of their colleagues who have gone there to interview Prince Kung and the members of the board of revenue with reference to the scheme. The syndicate in question, it is reliably stated, have deposited 3,000,000 taels with a certain foreign bank, and 2,000,000 taels' worth of securities in three Chinese banks in Peking as evidence of their wealth and ability to carry their suggestions to a successful issue. This amount is one-half of what will be at present required to build the line, according to the edict published in these columns a fortnight ago, and the other half (5,000,000 taels), the syndicate guaranty to raise from the native gentry and merchants of the various treaty ports and provincial capitals and from the Chinese of California, Australia, and the Straits Settlements, within six months after the promulgation of an edict granting the necessary authority to the syndicate. It is said the syndicate includes several wealthy retired emigrants who have returned from California, Australia, Singapore, and Java, and many of the best known Chinese of Hongkong, and a few in Shanghai, while those from Canton are represented by such men as the famous Weising lottery monopolist, Liu. Princes Kung and Li and their colleagues in the Ministry of War, including several of the presidents and vice-presidents of the board of revenue, were to have granted an audience on the 5th instant to the representatives of the syndicate. If satisfactory, the applicants were to be presented to the Em-

peror in a special audience in the palace, this being the prelude to the issue of the edict of authorization. The members of the syndicate now in Peking are staying with H. E. Chang Ying-huan, vice-president of the board of revenue and ex-minister to the United States, etc., who is a fellow provincial of theirs, and it was doubtless through this official's influence that they have been successful so far.

The North China Herald of January 17, 1896, says: It is reported, upon what seems to be good authority, that the Liangkiang viceregal government has given the construction of the Shanghai-Soochow Railway to a cosmopolitan syndicate, at the head of which is a Belgian. The Chinese are to borrow the money for construction from the syndicate, the loan to be repaid in installments beginning from the third or fourth year after trains have commenced running between the two cities. The object of this is to make the railroad obstructionists in Peking believe that Chinese capital has been employed in the construction of the road. The terminus of this railway is to be at Sinza (Chinese territory), where also will be the freight and passenger offices of the semi-government steamboat line to run between Shanghai, Soochow, and Hangchow. This may account for the eager buying lately of so much land in the vicinity of Sinza and West Shanghai by native land speculators.

COAL FIELDS OF CHINA.

The North China Herald of January 17, 1896, quotes a writer of "The Situation" in the Peking and Tientsin Times, of the 28th ultimo, as saying: "There are symptoms indicating that the Chinese near Peking are awakening to the advantage of employing foreign engineering knowledge and machinery. Considerable coal fields extend over a vast area of the mountains north and west of the capital, at a distance of about 100 li from it. They have hitherto been worked by the stereotyped, irrational, mole fashion, so characteristic of Chinese. When the natives discovered the coal seams on the sides of the mountains, they commenced digging into them, and in some places they have penetrated as far as 8,000 feet, in others only a few hundred feet, when they were stopped by water, with which difficulty they have been entirely unable to cope, and the mines have consequently, in many cases, been abandoned. We are glad, however, to hear that some rich Chinese, stirred by the railway movement, have entered into contracts with a foreign engineer to develop the mining possibilities of the northern districts.

"China's coal fields are exceeded by none but those in America, and in a more distant time they will have equal effect on the commerce and manufactures of the world. The cost of sea freights has been low enough to allow the coal to be carried to distant countries and sold more cheaply than coal

from nearer sources; but the construction of railways, the improvement of navigable rivers and other means of transport are, in many countries, entirely altering the conditions of the coal trade, and in Japan, India, and Australia the native coal is rapidly superseding the imported coal, and the same change will eventually take place in South Africa and in China when the coal deposits are developed."

NOTES.

American Glue, Bicycles, and Other Manufactures in Switzerland.—Incidental to the commercial movement of 1896 in this consular district, says Consul Ridgely, of Geneva, in a dispatch to the Department dated January 23, 1896, I have the honor to report that at least one article of American manufacture has been satisfactorily, and I hope permanently, introduced. This is liquid fish glue. Although old systems of work and manipulation prevail largely in this country, the advantages to be derived from the use of this glue are said to be so obvious that sales here at once attained a respectable figure. In all branches of industry where glue is used, viz, cabinet-making, book and leather binding, straw-hat factories, playing-card factories, etc., the hard material, in sticks or flakes, was heretofore employed. It had to be soaked, heated, and diluted, three operations adding to its first cost the value of fuel and hand work. Liquid fish glue, being always in a ready state for use, without any previous preparation, recommends itself to manufacturers for these reasons and also that of economy. The only objection to it is its strong fishy odor, but this, it is believed, can be readily destroyed.

Mr. Louis Moreau, of Chicago, representing the Union Glue Company, of Boston, and other American firms, is the special "promoter" of this glue. He has made various experiments to deodorize the raw material as it comes from America, and tells me that he has succeeded in his endeavor through the means of an electrolyze at low tension, which not only causes the nauseating smell to disappear, but also renders the glue as limpid as spring water. Mr. Moreau tells me that he has organized a company for the handling of this glue in Switzerland, France, Italy, and the south of Europe, with headquarters in Geneva, and the plant, I am advised, is being erected at the present time.

The presence of the American bicycle as an article of commerce in French Switzerland is also fairly assured. The Geneva dealers in bicycles are an extremely difficult coterie of merchants in so far as American wheels are concerned. They have the idea that the American wheel is too light and fragile for the active and hard service to which bicycles are put in Switzerland, and the several efforts that have heretofore been made to introduce American machines have proven quite ineffective. Three weeks ago, however, an American machine made by the Lozier Manufacturing Company, at Toledo, Ohio, was shown here by a representative of the company, who was introduced through the agency of this consulate, and the wheel in question was so perfectly, solidly, and nicely constructed that the best-known and most extensive firm of dealers here was promptly won over and not only accepted the agency for French Switzerland but gave a cash order outright

for a number of the machines. This I regard as a notable triumph for the American bicycle, and if the wheels which have been ordered should prove as strong and serviceable in use as they are nice and beautiful in construction, England and France will no longer control the market for first-class bicycles in French Switzerland.

I believe a good market could be had here for American office furniture, such as roll-top desks, etc., as well as for cheap bedroom sets, if they were constructed with an eye to the local taste.

A Novel Swiss Watch.—In a dispatch dated January 24, 1896, Consul Ridgely, of Geneva, says:

It may be interesting to American watchmakers to know that the latest invention of the watchmakers of Switzerland is a watch whose hands move from right to left instead of from left to right, as in ordinary watches. This unique invention is designed for the markets of Turkey, Japan, and other Oriental countries, where the natives read from right to left, and where, I am informed, there has been a demand for watches of this character. It is the invention of a Geneva watchmaker, who has covered it by Swiss patents, and who has applied or is applying for patent rights in the United States. The watch moves with perfect precision, and seems to be in all respects quite as good as other watches.

Dried California Fruits for Germany.—In a dispatch dated January 23, 1896, Consul-General Mason, of Frankfort, submits the following facts for the consideration of fruit growers in California:

Sun-dried California apricots, peaches, and pears sell at retail in Frankfort and neighboring towns for from 22 to 25 cents per pound, and their use in Germany, even at these prices, is steadily increasing. From the best information that can be obtained at this distance, 7 pounds of fresh apricots or peaches are required to make 1 pound of dried fruit from which the pits have been removed. Twenty dollars per ton, or 1 cent per pound, is reckoned a fair price in an average year for ripe apricots in southern California, and it is stated that since the choicest grade of that fruit is usually shipped fresh or used for canning, while the second quality is generally dried, it follows that a fruit grower who can sell his sun-dried apricots for 7 cents per pound is doing a paying, if not highly profitable, business.

Assuming, for greater certainty, that the fruit grower on the Pacific Coast sells his sun-dried apricots and peaches for 8 cents per pound, there is still a margin of 16 cents, or 200 per cent, between that figure and the retail price in Germany, which is absorbed by freight, import duty, and the profits of the successive dealers and commission merchants through whose hands such fruits now pass in the transit from the producer to the German consumer. How much of this margin is necessary expense, and how much is profit for someone? The inquiry should interest all California fruit growers who are ambitious for the largest success of their business.

Freight by steamship from San Francisco, Santa Monica, or San Diego, via Panama to Hamburg or Bremen, costs about 40 shillings (\$9.65) per ton—say half a cent per pound; import duty on dried fruits coming into Germany is 4 marks (95.2 cents) per 100 kilograms (224 pounds). This is forty-two one-hundredths, or less than half a cent per pound. Adding, therefore, 1 cent per pound for both freight and duty, and the cost of the fruit, when landed at Hamburg or Bremen, should not much exceed 9 cents per pound, exclusive of the cost of packing and handling.

But it appears, rather curiously, that most of the California dried fruit imported to Germany—and this is especially true of apricots—does not come directly from there, but has been carried by rail to Chicago in bags, there repacked in boxes, sent by rail to New York or Baltimore, and shipped to Europe. Who or what is responsible for this complicated and costly method of transit? So far as can be ascertained, the responsibility lies with the fruit growers themselves, who decline to take the trouble to select and pack their dried fruits in boxes for export, but dump it into bags and sell to the first comer, who is usually the purchasing agent of a firm in Chicago, or some other city in the Western or Atlantic States. As a consequence, Chicago, and not San Francisco or Los Angeles, is now the principal export market for California dried fruits destined for this part of Europe, and as a natural result the fruit, before it reaches the German consumer, has become so costly by reason of long rail freightage and repeated handlings, that it is a luxury beyond the reach of all but the well-to-do classes, and even they, while conceding its excellence, complain of its high price.

The proposition is, therefore, respectfully submitted that if the fruit growers and packers of California would organize an export association, adopt a uniform system of packing dried apricots, peaches, pears, and prunes in neat wooden boxes, with the top and bottom layers of pieces laid in regularly so as to make a good appearance when opened and displayed in a grocer's window, and would then ship their fruits either by steamer via Panama, or by rail to New Orleans and thence by steamship to a wholesale agency in Hamburg or Bremen, which should employ traveling salesmen to exhibit and sell it throughout Germany, the ultimate retail price could be reduced and a large and permanent market established which, after a year or two of such effort, would, so to speak, take care of itself. The same association could likewise handle canned and otherwise preserved fruits, which are in some quarters thus far preferred to the dried.

Native fresh fruits are always expensive in Germany, and in comparison with those of similar species from the United States, are uniformly flavorless and poor. The superiority of both dried and canned fruits from the Pacific States is generally recognized in this country, and the market which has been thus partially developed would seem to offer a fair field for organized, systematic, and persistent effort.

Austrian Petroleum Development.—Vice-Commercial Agent Murphy, of Luxemburg, transmits the following translation from the *Metzer Presse* of December 10, 1895:

In this industry, there have recently been developments which, if they prove to be permanent, must considerably alter the conditions which now obtain. New petroleum wells have recently been opened in Galicia which are so productive that, henceforth, Austria-Hungary will be able to dispense with foreign petroleum. At Schodniko, 13 kilometers from Boryslaw, a district which has long been known to contain petroleum, the Anglo-Austrian bank purchased, about a year and a half ago, 4,000 acres of land surrounding one shallow oil well. The new proprietors soon discovered a second oil basin at a depth of from 300 to 450 meters, and hardly any of the forty or fifty borings which have been made have been unsuccessful. In one place, at a depth of only 302 meters, such an important stream of oil was opened that thirty-six hours elapsed before it could be placed under control. In the meanwhile, 5,000 barrels of oil escaped. After the necessary provisions had been made for receiving the oil, the well was reopened on September 20, and within the first twenty-four hours, it is said, it yielded 1,000 tons. The oil is conveyed in pipes to Boryslaw, to which place a railroad will soon be built. Bopicaraska, near Gorlika, is described as being a second Schodniko. At a depth of 190 meters, the first well bored there ejected daily over 1,000 barrels of oil, most of which, at first, escaped into a creek. Accordingly, Austria-Hungary, which as recently as 1894 used, in addition to 92,155 tons of Galician oil, 105,700 tons of foreign petroleum, can no longer be counted upon as an importer of mineral oil.

Affairs in Mozambique.—Under date of October 10, 1895, Consular Agent Andrews, of Beira, supplies the following information:

There appears to be a slight improvement in this part of the country, greatly owing to the railway being connected with Beira and Fontesvilla, thus doing away with the present system of river traffic, which is so unreliable at certain seasons on account of the scarcity of water.

The Mozambique Company are extending the wharf at the custom-house, and are fitting steam cranes for the discharging of cargo.

It is intended to run a pier into deep water so that vessels can come alongside, but I doubt if it will be of much use on account of the roughness of the sea at times.

The telegraph is now open from Fontesvilla to Salisbury, which place is connected with Cape Colony. In a few weeks' time we shall have Beira connected and then be in communication with the world. The charges are very moderate, being 3s. 6d. for ten words to any part of South Africa.

The country is being opened up and in a very short time we shall have sugar, tobacco, mealies, and rice under cultivation.

The Portuguese are sending out emigrants, but I am afraid they will not last long, as the malarial fever will soon clear them out of low parts of the country. It is healthy enough close to the border of Mashonaland, and at the present time, there are hundreds of Dutch* farmers settled there and doing well.

The Vine Fungus in Germany.—Under date of Luxemburg, December 19, 1895, Vice-Commercial Agent Murphy sends the following translation from the *Luxemburger Zeitung*, of December 13, 1895:

The Ministerial Journal, Berlin correspondent, says: The severe frosts of last winter exercised a deleterious influence upon the vintage of 1895. Furthermore, the vineyards, especially those in the government district of Trier, suffered very much from the changeableness of the weather and also from the fungus *peronospora viticola*.

As in the two preceding years, this fungus had hardly shown itself; many wine growers neglected to protect their vines by sprinkling them with a solution of lime and copper vitriol. In the districts which had suffered most severely from the frosts this precaution was very generally neglected, owing to the mistaken belief that it would not pay to sprinkle the vines as there was already no probability of their producing fruit this year. The injurious consequences of this neglect showed themselves in the vintage, most of the unsprinkled vines having lost nearly all of their leaves before the grapes had fully developed. Consequently these grapes did not ripen, and as the wood could not properly mature, the damage caused by the wine growers' lack of precaution will continue to be felt in coming years.

Berlin Art International Exhibition.—Under date of December 19, 1895, Consul-General de Kay sends the following information, additional to that published in CONSULAR REPORTS No. 184 (January, 1896), page 73:

I have the honor to report that after several conversations with Count Ferdinand Harrach, president of the committee, I have secured a room on the east side of the exhibition, and also the prospect of a second room, conditionally, however, on the action of the American artists resident in Paris. Should Paris artists decide to decline the invitation to repeat their exhibit of last year, then this second room or small gallery will be available for the home artists, making two in all.

*NOTE BY THE CONSUL AT MOZAMBIQUE.—By "Dutch," Consular Agent Andrews evidently means Transvaal Boers.

I have further secured Count Harrach's promise that in the event of American artists deciding to send their works to Berlin they shall have the same privileges as artists in London or Paris, namely, their works shall be selected by a committee in New York appointed from home artists and art lovers, and shall be brought to Berlin and returned to New York free of charge. This promise was given verbally, but I do not doubt to obtain it in writing.

Meantime, I shall not cease my efforts to yet secure more liberal treatment on the part of the exhibition authorities, but at the present stage there is need of some expression of opinion from the United States as to the probability of a large and really representative collection of home work being brought together. Very likely, more space and better terms could be obtained if it were certain that American artists and art lovers would exert themselves to show their best in Berlin.

I respectfully suggest that certain commercial questions now occupying the attention of Americans and Germans should not stand in the way of a hearty acceptance of the invitation already issued by Berlin to American artists, but, on the contrary, that the differences of opinion between the two countries on such matters should, so far as possible, be counterbalanced by the friendliest relations on the neutral ground of the arts.

Tilsonburg-Port Burwell Railway.—Under date of January 14, 1896, Commercial Agent Killmaster, of Port Rowan, Ontario, reports the completion of a standard-gauge steam railroad from Tilsonburg to Port Burwell, a distance of about 20 miles, wholly within his consular district. This road is being operated by the Michigan Central Railroad Company, and adds greatly to the importance of Port Burwell by giving it an outlet aside from that by water. The harbor at Port Burwell is to be improved during the coming summer.

Railways in Para.—Consul Mathews, under date of January 6, 1896, transmits the following information concerning railways in Para :

For the benefit of those engaged in the manufacturing of railway materials, I wish to say that, in the vast State of Para, there are only 40 miles of railroad in operation, and about 100 miles more in course of construction.

The railroad already in operation is known as the Estrada de Ferro de Bragança, and, when completed, will connect Belem with Bragança, which is situated near the Atlantic. From this railroad, a spur will be constructed to Salinas, a town near the mouth of the Para River. Much will be added to the pleasure and comfort of the citizens of Para when trains can be run to that point. This railroad is owned and controlled by the State of Para, and, up to the present time, has not paid expenses. Nothing to amount to anything is produced along the line of the road, so it must depend, almost exclusively, for business upon the timber transported. Until the railroad is completed to the Atlantic, the passenger business will be small, and will add but little to its income. The locomotives and coaches in use are of American manufacture, but the rails used in the construction were imported from England. The spur, which is to connect the main line with Salinas, has already been contracted for, and is slowly being pushed to completion, yet several months must elapse before trains can be run to that point.

A railroad to Pinheiro, a town situated about 9 miles below the city of Para, is in contemplation—that is, the government of the State of Para is trying to induce its construction by a guaranty of 6 per cent for twenty years upon the cost of construction.

On account of the unequaled facilities for navigation and the very small population in the rural districts of North Brazil, extensive railroad building can only take place in the dis-

tant future. Still, I am of the opinion that this country can never reach high development, nor the city of Belem full growth until a great trunk line, following the course of the Tocantins, shall wend its way to the extreme south of Brazil. Such a line, passing as it would through the richest part of the Republic's domain, and joining the rich coffee districts of the south to the great rubber fields of the north, would make this city one of the great commercial centers of South America. Such a railroad would afford advantages that would induce a vigorous class of immigrants, who would open up the country and increase the commerce to a point little dreamed of at the present time.

Para-Manaos Cable.—Under date of January 6, 1896, Consul Mathews, of Para, reports as follows:

The steamship *Faraday* has just arrived from England, having on board 1,400 miles of cable, and will at once begin laying the cable to Manaos. I have been informed by the engineer in charge of the work that they will reach Manaos with the cable by the end of January or very early in February. The estimated cost of this cable, when ready for operation, is £210,000. The Brazilian Government has given a bonus of £17,000 per annum for thirty years, at the expiration of which time the ownership of the cable will revert to the Government of Brazil.

Nearly all the exporting rubber houses here are establishing branch houses in Manaos in anticipation of the improved conditions certain to take place as soon as the cable has reached there.

Commerce of Italy.—Under date of Palermo, November 21, 1895, Consul William H. Seymour transmits statistics covering the foreign trade of Italy for the first nine months of 1895, showing that the exports during that time amounted to \$144,400,000, being \$6,000,000 in excess of the exports for the first nine months of 1894, while the imports amounted to \$147,800,000, a decrease of \$18,000,000 from 1894.

The principal articles of export showing an increase as compared with 1894, were silk, hemp, flax, dyeing and tanning materials, and skins. A decrease occurred in the exports of spirits, beverages and oils, minerals and metals, cereals and vegetable products, and animals and their products.

The articles of import showing an increase were cereals, flour and vegetables, animals and their products, silk, wool, hemp, and minerals. The imports of cotton, skins, stones, pottery, and glass show a decrease.

The customs duties for the nine months of 1895 were about \$4,000,000 in excess of those of 1894, which was largely due to the fact that the 878,180 quintals of wheat imported paid about \$1.50 per quintal duty, and the 1,429,280 quintals of barley and maize nearly \$1 per quintal, this for the protection of the agricultural interests of the country.

Exports of Fruit from Sicily.—Consul Seymour writes from Palermo, January 15, 1896:

During the month of December, 1895, there were exported from Sicily to the United States 375,000 boxes of green fruit, of which 160,000 boxes were oranges. During no De-

cember preceding that of 1895 was there exported from Sicily to the United States as much fruit as during that month. The exports of green fruit from Palermo alone to the United States during December of 1894 and 1895, were 94,000 and 198,000 boxes, respectively. The stimulus the trade received last summer by fruit commanding everywhere, especially in the United States, an extraordinary price, had doubtless much to do with bringing about such an unusually large exportation during last December. The markets both in America and England, are glutted, and the prices often received are not sufficient to cover the expenses, to say nothing of the cost of the fruit. A cargo of oranges recently sold in New Orleans brought, I understand, from 75 cents to \$1 a box. Shipments in the meantime continue. The lemon crop is a very large one, but choice fruit, perhaps, is scarcer than it was last year. The orange crop is not as large as last year, but the quality of the fruit is very fair.

Lemons in Palermo.—Consul Seymour, under date of November 21, reports as follows:

I have the honor to state that on account of an unusually long drought, which still exists, the maturity of all fruits has been retarded. In this market, lemons fit for shipment command, in comparison with their quality, a very high price, and owing to the low prices that obtain in foreign markets, the majority of shippers are idle, awaiting a more favorable time to begin operations. The lemon crop in this district is a very large one, but in some places, a disease or insect which has been developed by the drought has somewhat injured the fruit.

Straits Settlements Trade (Correction).—Consul-General Pratt calls attention to an evident misprint in his report entitled "Straits Settlements Trade and Industries," published in CONSULAR REPORTS No. 181 (October, 1895). Lines four and five, second paragraph, page 129, of Consul-General Pratt's report reads: "Imports from the United States in 1893, \$3,127,661; in 1894, \$1,609,837; increase, \$1,517,824." The word "increase" should be "decrease."

Storage Facilities at Hiogo.—The Department of State is in receipt of two dispatches from Consul Connelly, of Hiogo (Kobé) Japan, dated October 29 and November 25, 1895, respectively, in relation to the insufficiency of the storage facilities at Hiogo (Kobé) for foreign commerce. Consul Connelly has been advised by Minister Dun of the steps that the Japanese Government will take to relieve the congested condition of the customs compound and says: "When completed, these betterments will lessen the danger and delay to which incoming and outgoing merchandise has been subjected, but will not be sufficient to end all cause of complaints; it is, however, a recognition on the part of the Japanese Government of the great growth of this port commercially, which has been ignored from the date of its opening to foreign trade, and of the efforts in behalf of American trade to and from Hiogo."

The following table shows the export and import trade of this port for the years 1884 and 1894, respectively:

Description.	1884.	1894.
	<i>Yen.</i>	<i>Yen.</i>
Exports from Hiogo (Kobé).....	6,463,600	29,085,443
Imports into Hiogo (Kobé).....	7,646,938	26,867,047

Proposed Sample House at Panama.—Consul-General Vifquain writes from Panama February 3, 1896:

A great many letters are received at this consulate for information relating to the needs of the people here as regards American manufactures, and I answer such questions as occasion requires; but notwithstanding American imports here do not seem to increase satisfactorily, and the letters are still coming. Evidently it is impossible to improve the situation by means of correspondence.

I do not know whether it is owing to the bad reputation of the climate here, or to some other reason, but commercial agents for American houses are not seen here. Of course, agents speaking both Spanish and French are required. I have seen English and French agents here whose expenses, including salary and traveling allowances, amount to \$12,000 per annum, the salary alone being \$6,000. It seems a large expense, to be sure, and yet if the English and French manufacturers can afford it, is there one good reason why Americans can not? I take it that the climate and the great scarcity of American agents speaking both Spanish and French are the main reasons why the American manufacturers, who are so very enterprising, do not send representatives here.

In view of this, I recommend that several of our manufacturers combine in establishing at this place a house of samples. In that establishment let them make as good a display of their different manufactures as it is possible to make—something that will attract attention at all times—an exposition, so to speak, where people will flock from curiosity. People of surrounding countries will also visit, and when they find what they require a cable can be sent to the parent house in the United States, by the agent in charge, and within two weeks the goods can be landed here, as three steamers leave New York each month for the Isthmus. This seems to me to be a prompt manner to do the business, and the best plan that can be devised to materially improve the export trade of the United States with this section of the world. Moreover, it is certainly the cheapest method, inasmuch as the whole expense per annum is not liable to exceed one-half the sum now paid to commercial agents, granting that Americans pay as much as their English and French competitors.

There is no sample house in Panama. Will the United States manufacturers secure the prestige of inaugurating one? I truly believe that it would prove a good investment. Of course, the house should be in charge of an American, speaking both the Spanish and French languages, and possessed at the same time of the truly American enterprise and pride.

Strike on the Mexican International Railroad.—Consul Sparks, of Piedras Negras, under date of February 7, 1896, reports to the Department:

Somewhere between two hundred and four hundred of the employees of the Mexican International Railroad Company are out on a strike. The men ask for 25 per cent increase in their wages, and because the railroad company declines to accede to their demand they have ordered a strike, which includes the machinists, boiler makers, carpenters, and painters. The trains, passenger, and freight, are running regularly, as none of the trainmen have yet

joined the strike. The strikers, as a general thing, are quiet. They remain in their quarters, reading and discussing the situation. Many of them have been to see me and ask my advice, etc. I have advised them not to destroy property or commit any infraction of the laws of Mexico, as then they would have no trouble, but if they did destroy property or violate the laws, they would have to suffer. They are all behaving nicely up to date, and I have offered my services to both parties to aid in bringing about an amicable settlement of the differences.

Missionaries in Morocco.—Consul-General Barclay, in a dispatch from Tangier, Morocco, dated January 24, 1896, says:

In October last, Rev. Mr. Nathan, the pioneer head of the "Morocco Mission," decided to establish a missionary post permanently at Mequinez, in the southern part of the Empire, and, in company with others of his collaborators, visited this city for that purpose. At his request I procured for them a letter from the minister of the Sultan to the governor of Mequinez securing their safe conduct and protection on their perilous journey, and demanded for them the right to locate in the city and occupy permanent premises if they so decided. The Moorish authorities of Mequinez refused them the privilege of renting a house unless they would bind themselves not to stay longer than five months. They were urged to go into a filthy inclosure and secure safety under the protection of armed guards in a quarter infected with cholera germs. Upon my protesting to the minister of the Sultan and demanding the rights and privileges due to Americans under the treaties, he promptly complied and gave them a strong letter to the governor, which had the desired effect. The mission is now firmly established with the permission and recognition of the Moorish Government.

This concession will mark an important era in the history of Morocco, which it is to be hoped will begin to lose its character as a "terra incognita" to Americans, now that the edge of the wedge of western civilization and Christianity has entered. Rev. Mr. Nathan has handed me his annual report just published, from which I make the inclosed extract.* He informs me that the mission will soon be increased by the arrival of eight new missionaries.

New Customs Duties in Uruguay.—Consul Schramm writes from Montevideo, January 15, 1896:

It will be of interest to manufacturers and exporters to be informed that the following articles, heretofore on the free list, have been decreed by the Government of Uruguay to pay henceforward import duties:

Articles.	Duty.	Articles.	Duty.
	<i>Per cent.</i>		<i>Per cent.</i>
Plows and parts of same.....	5	Wicking for candles.....	5
Wire up to No. 14.....	5	Boxes of wood, knocked down.....	25
Machines of all kinds for industrial purposes and parts thereof.....	5	Posts for fences.....	10
Machines and implements for agricultural purposes and parts thereof.....	5	Bottles, empty.....	15
Twine for binders and harvesters.....	5	Chlorate of potash.....	5
Hemp and jute, raw.....	5	Soda, single or double.....	5
		Dynamite.....	20

These changes are of special interest to the people of the United States, inasmuch as they are affected more particularly than perhaps the people of any other country. If we take into consideration that nearly all products of Uruguay are allowed to come into the United States

*The inclosure mentioned by Mr. Barclay expresses Mr. Nathan's appreciation of the consul-general's services and his satisfaction with the arrangement effected by him.

free of duty after paying an export duty to their own country, and that, owing to this liberality on our part, the exports from Uruguay to the United States have lately more than doubled, reaching \$4,185,814 for the calendar year 1895, and are still growing, it seems rather discouraging that the only article of importance so far allowed to come into this country duty free from the United States, viz, farming machinery and implements, should now be subjected to an import duty.

I have further to report that, by the same law, the import duty on leaf tobacco has been reduced from 50 cents to 30 cents per kilogram; on tobacco grown in Rio Grande and Paraguay, even to 15 cents; on Havana cigars, from \$6 to \$3; on cigars from other countries, from \$3 to \$1; on cigarettes, from \$6 to \$2.50; and on cut tobacco, from \$1 to 70 cents and 60 cents, respectively. On the other hand, an internal tax, in the form of revenue stamps, has been put on all manufactured tobacco, cigars, and cigarettes.

Recent Progress in Nicaragua.—In a dispatch from Managua, dated January 4, 1896, Minister Baker says:

On the invitation of the President of this Republic [Nicaragua], I attended the ceremony of the opening of Congress on the evening of January 1. This body is composed of thirty-five members, and its sessions usually last from three to five months. The country is divided into thirteen departments, and the members of Congress are apportioned among these in proportion to their respective populations. At the inauguration of this body on the 1st instant, President Zelaya read his message to the assemblage. It is a short, businesslike document, in which the author reviews the events of the past year in which this country was concerned. He dwells with much evident pride upon three features of his administration, viz, the reestablishment and considerable improvement of the public schools, which had been closed by his predecessor; the progress made in the building of railroads and telegraphs by the Government; and the great betterment of the financial condition of the country and its credit abroad. The President states that when he assumed power there was a large deficit in the national treasury, and the country was with limited credit at home or abroad. During his incumbency he has paid of the foreign debt, \$379,379.20, and of the domestic debt, \$2,157,446.63, and has in the treasury, \$713,179.69. Referring to these figures, he says: "At this rate of payments, inside of three years the Republic will be free of all debt."

But it is not proposed to keep on extinguishing the debt so rapidly. The domestic debt is now small, and the foreign debt amounts to but £285,000. This latter bears but 4 per cent interest, and has twenty years to run. With some of the surplus income the President proposes to build a railroad from Lake Nicaragua to Rama, there to connect with ocean steamers running to the United States and Europe. This work was inaugurated last July, and the message says:

"This is one of the greatest works that will be carried on in Nicaragua, and the day when it is finished our country will see its doors opened to universal commerce, and the unlimited richness thus developed will add to its strength and welfare. On this account, the administration over which I preside is resolved firmly to use all the means necessary to bring about the completion of this important work."

Continuing he says:

"It has been a lamentable error to have set aside the great highway that nature has given us to connect ourselves with the Atlantic Ocean, so that it is now nearly lost; and to mend part of this great mistake, the railroad to Rama will bring us into immediate contact with the world, and this will give us the material possession of that rich part of the Atlantic Coast in which the Nicaraguans have so many interests. But this does not mean to say that we ought to leave the River San Juan alone. We are obliged to do everything in our power to reconstruct that principal artery of commerce and the most valuable and beautiful possession nature has given us."

This is the only reference made to the canal concession in the message.

Short Coffee Crop in Nicaragua.—Minister Baker writes from Managua, December 24, 1895:

There has been a drought on the Pacific side of Nicaragua, during the past two years, but its bad effects on the crops were more pronounced this year than last. The coffee crop, if a full one, with all the new plantations now coming into bearing, ought to reach 200,000 quintals, while it is now believed the crop of this year, now being gathered, will not exceed, even if it reaches, 100,000 quintals.

The crops of corn, beans, and sugar have also been cut short by the continued drought, and, in consequence, in order to give relief to the people, the import duties upon these articles were suspended for a time. A great impulse was thus given to the importation of the above articles and of wheat flour, all of which came from our Pacific States—California, Oregon, and Washington. A greater number of people are eating wheat bread in Nicaragua this year than ever before, the increased consumption of flour reaching over 200 per cent.

Notwithstanding the shortness of the crops, there is no suffering from want in Nicaragua, and the coffee planter is prosperous even with his short crop, so handsome are the usual profits of its production.

Coffee lands are still quite reasonable in price in this country, and many prospectors are coming in during this season of inclemency in the States.

Vice-Consul Low, writing from Managua January 4, 1896, says:

Exchange for drafts on the United States and Europe has been going up here of late. Only two months ago merchants could pay with \$200 silver for \$100 in gold drafts, but at present they must pay \$208 or \$210 and even \$212, with the prospect that they may have to pay later on a still higher rate. The rise of exchange all over Central America may be attributed chiefly to the reduced crop of coffee, which is just now being harvested. Many coffee planters will not pick half, or even a third, of their last year's crop, and, in consequence, there will not be so many drafts issued as in previous years as the equivalent for their produce. Nicaragua produced last year 160,000 quintals of coffee for export, and it is believed that the crop will not reach 100,000 this year.

Opportunities for United States Trade in China.—Minister Denby transmits from Peking a report from Vice-Consul Bandinel, of Niuchwang, dated December 7, 1895, in which the latter says:

Now that the Japanese are evacuating this district (Manchuria), and the Chinese are resuming possession, it is probable that there will be some demand for munitions of war as follows: Cannon for fortifications, both large and quick firing, to replace that captured by the Japanese; repeating rifles and other firearms, large and small; ammunition for artillery and firearms (smokeless powder, if obtainable, is preferred); torpedoes. Steam launches may also be required, and it is not unlikely that there may be an opening for machinery for crushing beans and castor beans and pressing the crushed seed into cakes, for reeling silk from cocoons, for treating hemp and making rope, and for mining coal and precious metals. In the first instance, however, the ventures would be only on a small scale, and would be followed by larger orders if the initial attempts proved successful.

If any American merchants or manufacturers are in a position to compete for this business they should, I think, state among other details, the price (stated in Shanghai or Niuchwang taels) of goods laid down (but not landed) in Niuchwang harbor, the weight and dimensions of packages, the terms and conditions of payment, whether the goods are of guaranteed quality, and whether the price includes a return commission to the importing merchant. If catalogues and letters containing these and other necessary and descriptive details were sent to Messrs. Bandinel & Co., it is possible that they might be able to obtain orders from Chinese officials and others.

Export Tax on Rice at Saigon.—Under date of Saigon, January 11, 1896, Commercial Agent Schneegans reports:

The Conseil Colonial has, in acquiescing with the wishes of rice millers, supported by the chamber of commerce, and in order to check the exportation of unworked material, which is wanted to feed the mills, voted an export duty of 9 cents per 100 kilograms of paddy. This tax, which came into force on the 1st instant, is also intended to prevent fraudulent export of cargo rice, containing more than 33 per cent paddy. So far, however, the Chinese have not taken much notice of it, and, encouraged by the firmness of the Hongkong market, they have chartered a great number of steamers which are now beginning to crowd the harbor. The result is that prices have not been influenced by this increased export duty, and on account of so many steamers arriving to load for Hongkong, they have again advanced. The exports from December 28 to January 11 amount to 14,733.4 tons, as compared with 15,119.6 tons during the corresponding period of last year.

Profits of the Prussian State Railways.—Commercial Agent Moore writes from Weimar, January 29, 1896:

The immense financial importance of the State railways to the Kingdom of Prussia is shown by the figures contained in the budget for 1896-97, just published. The gross receipts from State railways in Prussia, according to the budget, is 1,027,173,000 marks (\$244,467,174), or more than half of the revenue of the State from all sources, the latter being 1,941,100,000 marks (\$461,981,800). The net earnings of the Prussian State railways, after the payment of 223,700,000 marks (\$53,240,600) interest on the working capital and for sinking fund, is 214,500,000 marks (\$51,051,000), which will be turned into the treasury for the use of the State. This sum is 46 per cent of the net receipts of Prussia, and larger than the income derived from taxes of all kinds, which is 181,300,000 marks (\$43,149,400)—only 39 per cent of the total State revenues. The railways are naturally great buyers of home industrial products. This is illustrated by the fact that 26,000,000 marks (\$6,188,000) are set aside for repairs and 38,500,000 marks (\$9,163,000) for new rolling stock. From the latter sum are to be bought during the year 1896-97, 386 locomotives, 479 passenger coaches, and 5,750 freight cars. In addition to the latter, 4,600 freight cars are to be bought, which are to be paid for from the "extraordinary fund." The number of freight cars owned by the Prussian State railways was 201,070 in 1892, and this number will have increased to 234,350 in 1896. The State railways also set aside the sum of 17,000,000 marks (\$4,046,000) for beneficial purposes, and 14,000,000 marks (\$3,332,000) for taxes and other public contributions.

United States Trade with Martinique.—Consul Tucker writes from Martinique, January 27, 1896:

The business relations between this island and the United States are improving. From August, 1893, to May, 1895 (when I assumed charge of this consulate), not a single shipment of merchandise was made from this place to the United States. I have used my utmost endeavors to induce merchants and manufacturers to ship their products to the United States, and am pleased to say, that as the fruits of my efforts, several shipments have been made, and as the returns proved satisfactory, others are now shipping. The steamer *Fontabelle*, of the Quebec Steamship Company's Line, which leaves here on the 31st instant, will carry five invoices of merchandise to New York, consisting of liqueurs, rum, vanilla, orange juice, etc., for which, in return, merchandise, especially breadstuffs, will be purchased and shipped here. The outlook for a good sugar crop is excellent, and planters and merchants are looking forward to better times in the near future.

Chilean Wheat Imports into Peru.—For the benefit of the wheat growers of our States of the far west, principally, says Consul Jastremski, of Callao, under date of January 18, 1896, I have the honor to call attention to the accompanying statement of the importations of wheat from Chile to the port of Callao during the year ending December 31, 1895. This statement was made in the Callao correspondence of the Lima Comercio, January 10, 1896: Imported by Milne & Co., 115,034 fanegas; Camine & Co., 81,397 fanegas; J. V. Peral, 78,387 fanegas; J. Revoredo, 70,921 fanegas; La Libertad Milling Company, 56,477 fanegas; B. Sesarego, 18,891 fanegas; S. Fernandez & Co., 11,795 fanegas; Ferrari, 6,846 fanegas; J. Bissi & Sons, 5,953 fanegas; B. Baglieto & Co., 4,580 fanegas; A. Musso, 4,710 fanegas; Chiarella & Chiappe, 3,258 fanegas; P. Ferrando, 1,255 fanegas; Carbone, 698 fanegas; total, 460,202 fanegas. As a Chilean fanega is equivalent to 2.575 bushels, the above quantity would make 1,185,020 bushels.

The value of this quantity of wheat may be readily calculated.

This wheat was brought to Callao by sailing vessels and by the Chilean and English steamships, which monopolize the coasting trade from Valparaiso to Panama. How much more was brought to the other ports of Peru and Ecuador, I am unable to state.

Chilean wheat, though nutritive and sweet, is generally dark brown in color, and unsuited for making white bread or pastry. It can not bear successful comparison with the white wheats of California and other Western States.

A duty on flour favors its importation and milling in Peru. This, combined with the total lack of steamship transportation from San Francisco and other ports of our west coast with the Pacific Coast of South America, save through a prohibitive reshipment of cargoes at Panama, has effectually shut out American wheat and flour from the probable successful competition that might, under favorable conditions, exist.

Whenever the establishment of an American steamship line between one or more ports of our Pacific Coast with Valparaiso and intermediate ports comes to be seriously considered, as it is to be hoped it will soon be, the item of wheat might perhaps enter into the calculations of the cargoes that would go to sustain such a line, as well as to increase the exportations of breadstuffs from the United States.

East Indian Bags in Santo Domingo.—Consul Grimke, of Santo Domingo, writes under date of January 17, 1896:

Bags of American manufacture for the transportation of sugar are being replaced in this market by bags manufactured in Calcutta, India. These bags are introduced directly from Europe, and also by way of the United States in bond. American bags are said to be composed of such poor material as to unfit them for the transportation of a heavy product such as sugar. The use of the Calcutta bags is considered more economical, notwithstanding the fact that a duty is paid on their importation into the United States filled with sugar, while the American article is entitled to be admitted free.

Consular Reports Transmitted to Other Departments.—The following reports (originals or copies) were transmitted during the month of February to other Departments for publication or for proper action thereon:

Consular officer reporting.	Date	Subject.	Department to which referred.
E. Schneegans, Saigon.....	Dec. 22, 1895	Rice.....	Department of Agriculture.
Do.....	Dec. 28, 1895	.....do.....	Do.
Do.....	Jan. 11, 1896	.....do.....	Do.
Louis H. Brühl, Catania.....	Dec. 13, 1895	The lemon industry of Sicily...	Do.
Reavel Savage, Nantes.....	May 15, 1895	Mushroom industry of France..	Do.
J. M. Wiley, Bordeaux.....	Sept. —, 1895	.....do.....	Do.
Charles P. Pressly, Marseilles..	June 7, 1895	.....do.....	Do.
Clyde S. Shropshire, Paris.....	Nov. 1, 1895	.....do.....	Do.
E. Spencer Pratt, Singapore.....	Sept. 5, 1895	Sumatra tobacco.....	Do.
G. H. Murphy, Luxemburg.....	Sept. 12, 1895	Public instruction in Luxem- - burg.	Bureau of Education.
Robert J. Kirk, Copenhagen....	Jan. 27, 1896	Leprosy in Iceland.....	Marine Hospital Service.
Charles de Kay, Berlin.....	Feb. 4, 1896	New medicine for goitre.....	Do.

FOREIGN REPORTS AND PUBLICATIONS.

British Trade Returns.—The accounts of trade and navigation of the United Kingdom for the month of January, 1895 and 1896, make the following showing of British imports and exports:

Articles.	1895.	1896.	Increase.	Decrease.
<i>Imports.</i>				
Animals, living (for food).....	\$2,310,007	\$3,750,894	\$1,440,887	
Articles of food and drink :				
Duty free.....	57,769,823	60,887,324	3,117,501	
Dutiable.....	9,492,131	9,210,851		\$281,280
Tobacco.....	1,107,132	1,541,850	434,718	
Metals.....	7,806,032	8,181,901	375,869	
Chemicals, dyes, and tannics.....	2,922,437	3,972,953	1,050,516	
Oils.....	3,293,679	4,005,511	911,832	
Raw materials for textiles.....	46,836,383	43,799,771		3,036,612
Raw materials for other industries.....	13,136,044	13,521,139	2,385,095	
Manufactured articles.....	27,657,930	29,622,709	1,964,779	
Miscellaneous goods.....	5,882,250	6,121,987	239,737	
Parcel post.....	626,566	596,893		29,673
Total imports.....	178,840,414	187,213,783	11,720,934	3,347,565
<i>Exports.</i>				
Animals, living.....	185,329	266,097	80,768	
Articles of food and drink.....	3,558,973	4,266,533	707,560	
Raw materials.....	6,367,176	7,453,262	1,086,086	
Manufactured and partly manufactured articles :				
Yarns and textiles.....	44,867,836	49,078,199	4,210,363	
Metals and metal goods.....	9,895,488	12,451,286	2,555,798	
Machinery and millwork.....	5,556,815	6,502,995	946,180	
Apparel and personal articles.....	3,809,261	4,821,422	1,012,161	
Chemicals and medicines.....	3,224,538	3,707,206	482,668	
All other manufactures.....	10,805,541	13,688,472	2,882,931	
Total manufactures.....	78,159,479	90,249,580	12,090,101	
Parcel post.....	408,175	569,327	161,152	
Total British products.....	88,679,132	102,804,799	14,125,667	
Foreign goods.....	18,915,397	23,482,550	4,567,153	
Total exports.....	107,594,529	126,287,349	18,692,820	
<i>Résumé.</i>				
Imports for the month.....	178,840,414	187,213,783	8,373,369	
Exports for the month.....	107,594,529	126,287,349	18,692,820	
Excess of imports.....	71,245,885	60,926,434		10,319,451

Cotton Yarn Spinning Mill at Hangchow.—The North China Herald, of Shanghai, of December 13, 1895, says: 'The opening of Hangchow as a treaty port has been the means of bringing out a considerable amount of hoarded

money, which is ready for investment in the various silk filatures and other enterprises recently inaugurated by the wealthy gentry and merchants of that metropolis of the south. The latest is the floating of a cotton yarn spinning mill company with a capital of \$400,000 at \$100 per share, one-half to be subscribed for by the gentry and local banks and the other half to consist of a loan from the provincial exchequer. The applications for shares in this company are reported to have numbered five times over the intended capital. The foreign custom of collecting money for shares is to be here followed, the first payment on application being \$25 per share, the second call of \$50 in February next, and the third and last call of \$25 in June next.

Foreign Comments on United States Consular Reports.—The Indian Textile Journal, of Bombay, India, in an article on "Consular Agencies," says:

In the competition for new markets and the extension of existing ones, consular agencies, in the absence of direct representatives of the producer, are powerful factors and can greatly assist or retard the expansion of trade for the countries they respectively represent. The duties of a consul, as at present carried out, seem capable of a wide interpretation. In some cases, it is thought sufficient to quote the figures of imports and exports of the country, province, or district of the various articles of commerce for a given period—yearly, half-yearly, or quarterly. In other cases, where more labor and attention is expended on the work, the relative proportions of trade outwards and inwards passing between the various countries concerned are noted, and suggestions are given as to the reasons of the fluctuations, with the view of stimulating the country represented by the consul to acquire new territory or recover lost ground. The ideal consul is he who, although possibly having no previous knowledge of the multifarious articles produced in his country, by patient prodding, obtains the fullest details of the goods specially adapted for the place where he is resident, and transmits these to his Government to be made public for the benefit of manufacturers. Thus, in textile goods, one occasionally sees, in consular reports,* particulars of the lengths, widths, weights, and prices of the various classes of cloths sold in distant parts of the world, and, in cases of special and fancy cloths, samples are sent to be open to inspection by any manufacturer. It is only in this way that countries wishing to push business in markets hitherto unknown to them can hope to trade profitably. The gaudy silk handkerchief woven in Bombay for the Burmah market would probably be unsalable in any other part of the world, and so with many other classes of goods, unless specially suited to the taste of the consumer. In furnishing ample, accurate, practical, and up-to-date information, it is freely acknowledged that the American and German consular services are preeminent, and there is no doubt that it is largely by the knowledge thus acquired that manufacturers in those countries have, by showing their adaptability in the way of supplying the exact article required in each market, to a considerable extent displaced the products of the British manufacturer, who now begins to discover that in this respect he has been somewhat too conservative. It is recognized in England that in this most important department of consular work the United States consuls in Manchester and Bradford are, the one in connection with the cotton, the other with the woollen industry, among the most active, intelligent, and enthusiastic in the service. They forward the fullest information, at the earliest possible moment, of every new movement in these trades. The same may be said of German consuls in almost every country of the world, but (with few notable exceptions) of English consular reports we hear very little, while the merchant or manufacturer in India who has no correspondent in a foreign country, must get all his infor-

*British.

mation at second hand. With the keen international rivalry now existing, England and its dependencies should have, in self-defense, the most reliable commercial intelligence department in the world, which it is certain it does not at present possess.

The Manchester (England) Guardian, in an editorial article, says:

A special excellence of United States consular reports is the frequency with which the writers seize promptly upon any new departure in trade or industry in their several districts, and forthwith proceed to investigate it thoroughly and prepare a monograph about it. From such documents it is often possible to learn more concerning such changes, even in our own country, than can be gathered elsewhere except at the cost of much labor. An example of this excellence occurs in a luminous statement lately sent by the American consul at Bradford to his Government upon the "Revival of the Mohair Trade." It is well known to those who have occasion to observe alterations of fashion in women's dress materials, that within the last twelve months the old taste for lustrous fabrics, which had for years given place to that for softer stuffs, has come to life again in all countries having a cool or temperate climate. This change has brought great prosperity to the industries and trade of Bradford, which has long held the preeminence in the production of the brighter fabrics made chiefly from mohair, or mohair and cotton. Bradford has thus carried off the lion's share of this revived trade, just as the French worsted manufacturing districts secured that of the softer goods when these came into fashion. Mr. Meeker tells us how Bradford acquired its superiority in the production of lustrous fabrics, and why she retains it.

French Commercial Mission in China.*—Mr. Rocher (consul), director of the Lyons exploring mission in China, telegraphs to the Chamber of Commerce at Lyons, under date of January 8, that he arrived at Yundan-You on the 28th of December last, and that the mission has met with the most cordial welcome from the Chinese authorities. The consul adds that the Lyons mission, after having studied the commercial resources of the Yunnan, will continue its route towards Tchoung-King, its center of operations and its chief destination. To reach there two parties will be formed—one of which will take the way of the Sé-Tchouen and of the Yangtze by Tchao-Tung and Soui-Tcheou-Fou, and the other will reach Tchoung-King, the great commercial and manufacturing metropolis of central China, by the Kwei-Tchéou, in passing to Kouï-Yang-Fou. The spirits and health of the mission are excellent.

New York's Proposed Commercial Museum as Viewed Abroad.*—The Handels Museum, of Vienna, announces that a society has been organized at New York, under the name of the International Permanent Exhibition Company, with a view to establishing in that city an international commercial museum. It will be installed in the Industrial Building, which has been rented for ten years for that purpose. The European, Mexican, and Japanese manufacturers have already promised to participate in the exposition with their latest articles. The director of the museum, Mr. Charles H. Briggs, associated with the New York Handels Zeitung, announces that it is

* Translated from *Revue du Commerce Extérieur*, of Paris, January 25, 1896.

proposed to organize an exposition where foreign purchasers will be able to examine American products, and American purchasers to examine foreign products. A considerable number of American manufacturers have already engaged to appear at the exposition. This will comprise a bureau of information which will endeavor to develop business relations between the United States and other nations. It holds itself ready to furnish the most detailed information to manufacturers intending to exhibit.

French Cable Projects.*—The committee of the budget [of the French Chamber of Deputies] has been occupied with a proposition from Messrs. de Mahy and Brunet relating to the laying of a submarine cable connecting Tamatave (Madagascar) with Reunion and Maurice Island. The committee, believing that it could not substitute its initiative for that of the Government, rejected the proposition. The committee afterwards adopted the plan of convention agreed upon by the Government and the French company of cables, the object of which is the establishment of a cable between Brest and New York, with extension to the Antilles and Para (Brazil). The company undertakes the expense during the thirty years of its concession to maintain the cable actually existing, whose communications have been interrupted for six months past. Beyond the sum of 2,500,000 francs, the receipts would be divided equally between the Government and the company. The share coming to the company would be appropriated to the diminution of the subsidy furnished by the Government.

Trans-Siberian Railroad vs. Suez Canal.*—The Russian Ministry of Finance is interested at the present moment in the organization of a regular line of steamers between the ports of China and Japan and Vladivostock (Siberia). After the completion of the Trans-Siberian Railroad, the importance of Vladivostock will become considerable, for a large quantity of merchandise and a great number of travelers now arriving in the far East, by way of the Suez Canal, will make the journey by crossing European Russia and Siberia.

Exhibition of Agricultural Machinery at Vienna.†—The Journal Official states that the Imperial and Royal Society of Agriculture of Vienna is organizing a second international market, with an exhibition of agricultural machinery, to be held in the Austro-Hungarian capital from the 9th to the 14th of May, 1896. The first international market was held in the month of May last.

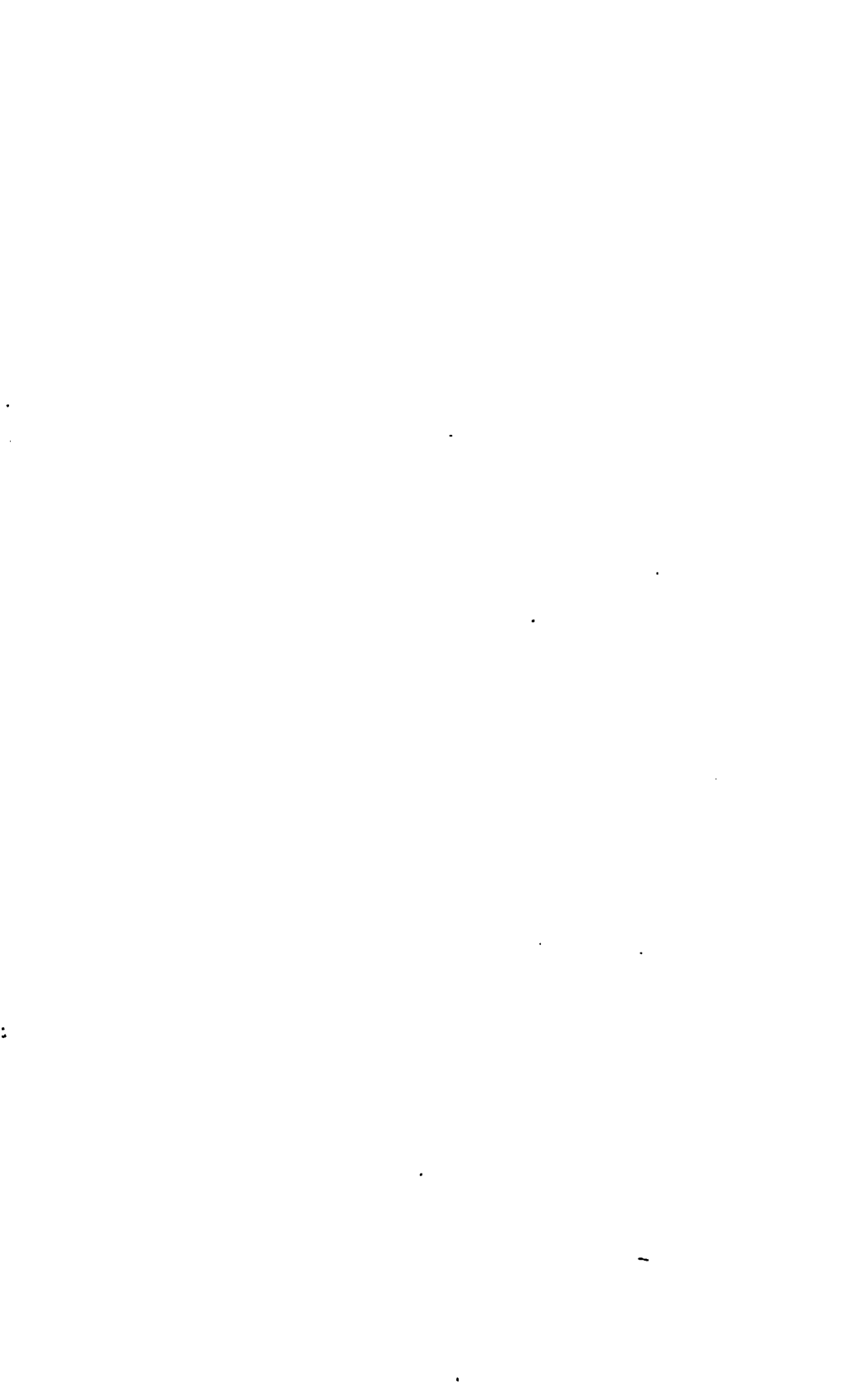
* Translated from *Revue du Commerce Extérieur*, January 25, 1896.

† British Board of Trade Journal, February, 1896.

Athletic Exposition in the Tyrol.—Mr. Hengelmüller, the minister of Austria-Hungary at Washington, in a note to the Secretary of State dated January 14, 1896, calls attention to the fact that "an international exposition for physical and sanitary training and sport, including the industries connected therewith, is to be held at Innsbruck, Tyrol, from May to October, 1896," and adds: "In compliance with the request of the central commission of this exposition, I take the liberty herewith to send your excellency several copies of the programme thereof, with the request that you will kindly transmit them to such parties as may be interested. I take the liberty, however, with the view to the prevention of any misunderstanding, expressly to state that the exposition has been organized entirely by local managers." In accordance with Mr. Hengelmüller's request, the matter was brought to the attention of the Smithsonian Institution, and the secretary of the institution, Mr. S. P. Langley, in a letter to the Secretary of State dated February 24, 1896, says: "It is possible that certain manufacturers of the accessories of travel and sport might be induced to make small exhibits if the plan of the exposition were made known to them. I doubt, however, whether they would do this unless there were some Government commission appointed to take charge of these exhibits, transport them to Innsbruck, and attend to their installation and return. There are many difficulties attending the participation by private exhibitors in foreign exhibitions unless there is some responsible person resident at the exposition to attend to their interests."

Americans in Borneo.—The London and China Telegraph of February 17, 1896, says:

We understand that two adventurous Americans recently arrived in Yokohama—Dr. W. H. Furness and Dr. H. M. Hiller—who hail from Philadelphia, have purchased from Captain Snow the schooner *Retriever*, and are now fitting her out with the view of embarking on an expedition to Borneo. Their intention, we believe, is to land on the western coast of the island, to travel up one of the rivers as far as possible into the interior, and thence to make their way as best they can to the eastern side of the island, where the *Retriever* will be awaiting their arrival. The undertaking which Dr. Furness and Dr. Hiller have decided to engage in is no mean one, as a glance at the map of Borneo will show, and if they accomplish their object, as it is to be hoped they will, they will have much to tell upon their return that will be of interest to scientists as well as to the general public.



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131, page 663.

VALUES OF FOREIGN COINS.

The following statements show the valuation of foreign coins, as given by the Director of the United States Mint and published by the Secretary of the Treasury, in compliance with the first section of the act of March 3, 1873, viz: "That the value of foreign coins, as expressed in the money of account of the United States, shall be that of the pure metal of such coin of standard value," and that "the value of the standard coins in circulation of the various nations of the world shall be estimated annually by the Director of the Mint, and be proclaimed on the 1st day of January by the Secretary of the Treasury."

In compliance with the foregoing provisions of law, annual statements were issued by the Treasury Department, beginning with that issued on January 1, 1874, and ending with that issued on January 1, 1890. Since that date, in compliance with the act of October 1, 1890, these valuation statements have been issued quarterly, beginning with the statement issued on January 1, 1891.

These estimates "are to be taken (by customs officers) in computing the value of all foreign merchandise made out in any of said currencies, imported into the United States."

The following statements, running from January 1, 1874, to April 1, 1894, have been prepared to assist in computing the proper values in American money of the trade, prices, values, wages, etc., of and in foreign countries, as given in consular and other reports. The series of years are given so that computations may be made for each year in the proper money values of such year. In hurried computations, the reductions of foreign currencies into American currency, no matter for how many years, are too often made on the bases of latest valuations. When it is taken into account that the ruble of Russia, for instance, has fluctuated from 77.17 cents in 1874 to 37.2 cents in April, 1894, such computations are wholly misleading. All computations of values, trade, wages, prices, etc., of and in the "fluctuating-currency countries" should be made in the values of their currencies in each year up to and including 1890, and in the quarterly valuations thereafter.

To meet typographical requirements, the quotations for the years 1876, 1877, 1879, 1881, and 1882 are omitted, these years being selected as showing the least fluctuations when compared with years immediately preceding and following.

To save unnecessary repetition, the estimates of valuations are divided into three classes, viz: (A) countries with fixed currencies, (B) countries with fluctuating currencies, and (C) quarterly valuations of fluctuating currencies.

A.—Countries with fixed currencies.

The following official (United States Treasury) valuations of foreign coins do not include "rates of exchange." It follows, therefore, that when foreign money orders are required, the post-office authorities, to save the Department from incurring loss in such transactions, add the rate of exchange to these valuations.

Countries.	Standard.	Monetary unit.	Value in terms of United States gold.	Coins.
Argentine Republic*.....	Gold and silver...	Peso	\$0.96, 5	Gold—Argentine (\$4.82, 4) and $\frac{1}{2}$ Argentine; silver—peso and divisions.
Austria-Hungary†.....	Gold	Crown .....	.20, 3	Gold—20 crowns (\$4.05, 2) and 10 crowns.
Belgium.....	Gold and silver...	Franc.....	.19, 3	Gold—10 and 20 franc pieces; silver—5 francs.
Brazil	Gold	Milreis .....	.54, 6	Gold—5, 10, and 20 milreis; silver— $\frac{1}{2}$, 1, and 2 milreis.
British North America (except Newfoundland)).....	do.....	Dollar	1.00	
Chile‡.....	Gold and silver...	Peso .....	.92, 2	Gold—escudo (\$1.82, 4), doubloon (\$4.56, 11, and condor (\$9.12, 8); silver—peso and divisions.
Cuba.....	do.....	do.....	.92, 6	Gold—doubloon (\$5.01, 7); silver—peso.
Denmark.....	Gold	Crown.....	.26, 8	Gold—10 and 20 crowns.
Egypt.....	do.....	Pound (100 piasters).....	4.94, 3	Gold—10, 20, 50, and 100 piasters; silver—1, 2, 10, and 20 piasters.
Finland.....	do.....	Mark.....	.19, 3	Gold—10 and 20 marks (\$1.93 and \$3.85, 9).
France.....	Gold and silver...	Franc.....	.19, 3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany.....	Gold	Mark.....	.23, 8	Gold—5, 10, and 20 marks.
Great Britain.....	do.....	Pound sterling.....	4.86, 6 $\frac{1}{2}$	Gold—sovereign (pound sterling) and half sovereign.
Greece.....	Gold and silver...	Drachma.....	.19, 3	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti.....	do.....	Gourde.....	.96, 5	Silver—gourde.
Italy.....	do.....	Lira.....	.19, 3	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Liberia.....	Gold	Dollar	1.00	
Netherlands§.....	Gold and silver...	Florin.....	.40, 2	Gold—10 florins; silver— $\frac{1}{2}$, 1, and 2 $\frac{1}{2}$ florins.
Newfoundland.....	Gold	Dollar	1.02, 4	Gold—\$2 (\$2.02, 7).
Portugal.....	Gold	Milreis	1.08	Gold—1, 2, 5, and 10 milreis.
Spain.....	Gold and silver...	Peseta.....	.19, 3	Gold—25 pesetas; silver—5 pesetas.
Sweden and Norway...	Gold	Crown .....	.26, 8	Gold—10 and 20 crowns.
Switzerland.....	Gold and silver...	Franc.....	.19, 3	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey.....	Gold	Piaster.....	.04, 4	Gold—25, 50, 100, 200, and 500 piasters.
Venezuela.....	Gold and silver...	Bolivar.....	.19, 3	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

* In 1874 and 1875 the gold standard prevailed in the Argentine Republic. Its currency does not appear in the statements again until 1883, when the double standard prevailed, and the peso attained a fixed value of 96.5 cents.

† On reference to the table of "fluctuating currencies," it will be seen that Austria had the silver standard up to and including the quarter ending July 1, 1892. The next quarter (October 1) inaugurated the gold standard (see note under table of "fluctuating currencies").

‡ The gold standard prevailed in Chile until January 1, 1890. The value of the peso has been the same under both standards.

§ The Netherlands florin, as will be seen in the "fluctuating" table, became fixed in value (40.2 cents) in 1880.

B.—Countries with fluctuating currencies, 1874-90.

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1874.	1875	1878.	1880.	1883.	1884.
Austria-Hungary*	Silver	Florin.....	\$0.47,6	\$0.45,3	\$0.45,3	\$0.41,3	\$0.40,1	\$0.39,8
Bolivia.....	do.	Dollar until 1880; boliviano thereafter.	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Central America.....	do.	Peso.....	.96,5	.91,8	.91,8	.83,6		
China.....	Silver	Haikwan tael.....	1.61	1.61				
Colombia.....	do.	Peso.....	.96,5	.96,5	.96,5	.83,6	.81,2	.80,6
Ecuador.....	do.	do.	.96,5	.91,8	.91,8	.83,6	.81,2	.80,6
Egypt†	Gold.....	Pound (100 piasters).			4.97,4	4.97,4	4.90	4.90
India.....	Silver	Rupee.....	.45,8	.43,6	.43,6	.39,7	.38,6	.38,3
Japan.....	{ Gold.....	} Yen.....	.99,7	.99,7	.99,7	.99,7		
	{ Silver.....						.87,6	.86,9
Mexico.....	do.	Dollar.....	1.04,7½	.99,8	.99,8	.90,9	.88,2	.87,5
Netherlands‡	Gold and silver.	Florin.....	.40,5	.38,5	.38,5	.40,2		
Peru.....	Silver	Sol.....	.92,5	.91,8	.91,8	.83,6	.81,2	.80,6
Russia.....	do.	Ruble.....	.77,17	.73,4	.73,4	.66,9	.65	.64,5
Tripoli.....	do.	Mahbub of 20 piasters.	.87,09	.82,9	.82,9	.74,8	.73,3	.72,7

Countries.	Standard.	Monetary unit.	Value in terms of the United States gold dollar on January 1—					
			1885.	1886.	1887.	1888.	1889.	1890.
Austria-Hungary*	Silver.....	Florin.....	\$0.39,3	\$0.37,1	\$0.35,9	\$0.34,5	\$0.33,6	\$0.42
Bolivia.....	do.	Dollar until 1880; boliviano thereafter.	.79,5	.75,1	.72,7	.69,9	.68	.85
Central America.....	do.	Peso.....				.69,9	.68	.85
Colombia.....	do.	do.	.79,5	.75,1	.72,7	.69,9	.68	.85
Ecuador.....	do.	do.	.79,5	.75,1	.72,7	.69,9	.68	.85
Egypt†	Gold.....	Pound (100 piasters).	4.50	4.90	4.94,3	4.94,3	4.94,3	4.93,3
India.....	Silver.....	Rupee.....	.37,8	.35,7	.34,6	.33,2	.32,3	.40,4
Japan.....	{ Gold.....	} Yen.....			.99,7	.99,7	.99,7	.99,7
	{ Silver.....		.85,8	.81	.78,4	.75,3	.73,4	.91,7
Mexico.....	do.	Dollar.....	.86,4	.81,6	.79	.75,9	.73,9	.92,3
Peru.....	Silver.....	Sol.....	.79,5	.75,1	.72,7	.69,9	.68	.85
Russia.....	do.	Ruble.....	.63,6	.60,1	.58,2	.55,9	.54,4	.68
Tripoli.....	do.	Mahbub of 20 piasters.	.71,7	.67,7	.65,6	.63	.61,4	.76,7

* The silver standard prevailed in Austria-Hungary up to 1832. The law of August 2 of that year (*see* CONSULAR REPORTS, No. 147, p. 623) established the gold standard.

† The Egyptian pound became fixed in value at \$4.94,3 in 1887.

‡ The Netherlands florin fluctuated up to the year 1880, when it became fixed at 40.2 cents.

C.—Quarterly valuations of fluctuating currencies, 1891-'94.

Countries.	Monetary unit.	1893.				1894.			
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.	July 1.	Oct. 1.
Bolivia.....	Silver boliviano.	\$0.61,3	\$0.61	\$0.60,4	\$0.53,1	\$0.51,6	\$0.46,5	\$0.45,7	\$0.46,4
Central America...	Silver peso.....	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
	(Shanghai tael.	.90,6	.90 1	.89,2	.76,4	.76,2	.68,6	.67,6	.68,5
	Haikwan tael.	1.01	1.00,4	.99,4	.87,4	.84,9	.76,5	.75,3	.76,3
China*	Tien-Tsin tael.								.77,7
	Chefoo tael.								.77,7
	Silver peso.....	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
Colombia.....	do.....	.61,3	.61	.60,4	.53,1	.51,6	.46,5	.45,7	.46,4
Ecuador.....	Silver rupee.....	.29,2	.29	.28,7	.25,2	.24,5	.22,1	.21,7	.22
India.....	Silver yen.....	.66,1	.65,8	.65,1	.57,3	.55,6	.50,1	.49,3	.50
Japan†.....	Silver dollar.....	.66,6	.66,2	.65,6	.57,7	.56	.50,5	.49,7	.50,4
Mexico.....	Silver sol.....	.61,3	.61	.60,4	.53,1				
Peru.....	Silver ruble.....	.49,1	.48,8	.48,3	.42,5	.52,6	.46,5	.45,7	.46,4
Russia‡.....	Silver mahbub.....	.55,3	.55	.54,5	.47,9	.47,3	.37,2	.36,6	.37,1
Tripoli.....	Silver bolivar.....					.46,5	.41,9	.41,3	.41,8
Venezuela‡.....									

Countries.	Monetary unit.	1895.				1896.	
		Jan. 1.	April 1.	July 1.	Oct. 1.	Jan. 1.	April 1.
Bolivia.....	Silver boliviano.	\$0.45,5	\$0.44,1	\$0.48,6	.48,6	\$0.49,1	\$0.49,3
Central America.....	Silver peso.....	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3
	(Shanghai tael.	.67,3	.65,2	.71,8	.71,8	.72,5	.72,9
	Haikwan tael.	.74,9	.75,6	.80	.80,0	.80,8	.81,2
China*	Tien-Tsin tael.	.71,4	.69,2	.76,1	.76,2	.76,9	.77,3
	Chefoo tael.	.70,4	.68,3	.75,1	.75,2	.75,9	.76,3
	Silver peso.....	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3
Colombia.....	do.....	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3
Ecuador.....	Silver rupee.....	.21,6	.21,0	.23,1	.23,1	.23,3	.23,4
India.....	Silver yen.....	.49,1	.47,6	.52,4	.52,4	.52,9	.53,2
Japan†.....	Silver dollar.....	.49,5	.47,9	.52,8	.52,8	.53,3	.53,6
Mexico.....	Silver kran.....			.08,9	.09,0	.09	.09,1
Persia.....	Silver sol.....	.45,5	.44,1	.48,6	.48,6	.49,1	.49,3
Peru.....	Silver ruble.....	.36,4	.35,3	.38,9	.38,9	.39,3	.39,5
Russia‡.....	Silver mahbub.....	.41,1	3-9,8	.43,8	.43,8	.44,3	.44,5
Tripoli.....							

* China (silver). The Haikwan tael is the customs tael, and the Shanghai tael that used in trade. Consul-General Denny (CONSULAR REPORTS No. 43, p. 516) says: "The value of the tael varies in the different ports of China, and every port has two taels, one being the Government, or Haikwan, tael, in which all duties have to be paid, and the other the market tael, the former exceeding the latter by some 11 per cent."

† Gold is the nominal standard in Japan, but silver is practically the standard. The fixed value of the gold yen is 99.7 cents.

‡ The gold ruble is valued at 77.2 cents. Silver is the nominal standard, but paper is the actual currency, and its depreciation is measured by the gold standard.

§ The Venezuelan bolivar became fixed in value (19.3 cents) on January 1, 1895.

FOREIGN WEIGHTS AND MEASURES.

The following table embraces only such weights and measures as are given from time to time in CONSULAR REPORTS and in Commercial Relations:

Foreign weights and measures, with American equivalents.

Denominations.	Where used.	American equivalent.
Almude.....	Portugal.....	4.422 gallons.
Ardeb.....	Egypt.....	7.6907 bushels.
Are.....	Metric.....	0.02471 acre.
Aröbe.....	Paraguay.....	25 pounds.
Arratel or libra.....	Portugal.....	1.011 pounds.
Arroba (dry).....	Argentine Republic.....	25.3175 pounds.
Do.....	Brazil.....	32.38 pounds.
Do.....	Cuba.....	25.3664 pounds.
Do.....	Portugal.....	32.38 pounds.
Do.....	Spain.....	25.36 pounds.
Do.....	Venezuela.....	25.4024 pounds.
Arroba (liquid).....	Cuba, Spain, and Venezuela.....	4.263 gallons.
Arshine.....	Russia.....	28 inches.
Arshine (square).....	do.....	5.44 square feet.
Artel.....	Morocco.....	1.12 pounds.
Baril.....	Argentine Republic and Mexico.....	20.0787 gallons.
Barrel.....	Malta (customs).....	11.4 gallons.
Do.....	Spain (raisins).....	100 pounds.
Berkovet.....	Russia.....	361.12 pounds.
Bongkal.....	India.....	832 grains.
Bonw.....	Sumatra.....	7,096.5 square meters.
Bu.....	Japan.....	0.1 inch.
Butt (wine).....	Spain.....	140 gallons.
Caffiso.....	Malta.....	5.4 gallons.
Candy.....	India (Bombay).....	529 pounds.
Do.....	India (Madras).....	500 pounds.
Cantar.....	Morocco.....	113 pounds.
Do.....	Syria (Damascus).....	575 pounds.
Do.....	Turkey.....	124.7036 pounds.
Cantaro (Cantar).....	Malta.....	175 pounds.
Carga.....	Mexico and Salvador.....	300 pounds.
Catty.....	China.....	1.333½ (1½) pounds.
Do.....	Japan.....	1.31 pounds.
Do.....	Java, Siam, Malacca.....	1.35 pounds.
Do.....	Sumatra.....	2.12 pounds.
Centaro.....	Central America.....	4.2631 gallons.
Centner.....	Bremen and Brunswick.....	117.5 pounds.
Do.....	Darmstadt.....	110.24 pounds.
Do.....	Denmark and Norway.....	110.11 pounds.
Do.....	Nuremberg.....	112.43 pounds.
Do.....	Prussia.....	113.44 pounds.
Do.....	Sweden.....	93.7 pounds.
Do.....	Vienna.....	123.5 pounds.
Do.....	Zollverein.....	110.24 pounds.
Do.....	Double or metric.....	220.46 pounds.
Chih.....	China.....	14 inches.
Coyan.....	Sarawak.....	3,098 pounds.
Do.....	Siam (Koyan).....	2,667 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Cuadra.....	Argentine Republic.....	4.2 acres.
Do.....	Paraguay.....	78.9 yards.
Do.....	Paraguay (square).....	8.077 square feet.
Do.....	Uruguay.....	Nearly 2 acres.
Cubic meter.....	Metric.....	35.3 cubic feet.
Cwt. (hundredweight).....	British.....	112 pounds.
Dessiatine.....	Russia.....	2.6997 acres.
Do.....	Spain.....	1.599 bushels.
Drachme.....	Greece.....	Half ounce.
Dun.....	Japan.....	1 inch.
Egyptian weights and measures.....	(See CONSULAR REPORTS No. 144.)	
Fanega (dry).....	Central America.....	1.5745 bushels.
Do.....	Chile.....	2.575 bushels.
Do.....	Cuba.....	1.599 bushels.
Do.....	Mexico.....	1.54728 bushels.
Do.....	Morocco.....	Strike fanega, 70 lbs., full fanega, 118 lbs.
Do.....	Uruguay (double).....	7.776 bushels.
Do.....	Uruguay (single).....	3.888 bushels.
Do.....	Venezuela.....	1.599 bushels.
Fanega (liquid).....	Spain.....	16 gallons.
Feddan.....	Egypt.....	1.03 acres.
Frail (raisins).....	Spain.....	50 pounds.
Frasco.....	Argentine Republic.....	2.596 quarts.
Do.....	Mexico.....	2.5 quarts.
Fuder.....	Luxemburg.....	264.17 gallons.
Garnice.....	Russian Poland.....	0.88 gallon.
Gram.....	Metric.....	15.432 grains.
Hectare.....	do.....	2.471 acres.
Hectoliter:		
Dry.....	do.....	2.838 bushels.
Liquid.....	do.....	26.417 gallons.
Joch.....	Austria-Hungary.....	1.422 acres.
Ken.....	Japan.....	4 yards.
Kilogram (kilo).....	Metric.....	2.2046 pounds.
Kilometer.....	do.....	0.621376 mile.
Klafter.....	Russia.....	216 cubic feet.
Kota.....	Japan.....	5.13 bushels.
Korree.....	Russia.....	3.5 bushels.
Last.....	Belgium and Holland.....	85.134 bushels.
Do.....	England (dry malt).....	82.52 bushels.
Do.....	Germany.....	2 metric tons (4,480 pounds).
Do.....	Prussia.....	112.29 bushels.
Do.....	Russian Poland.....	11¾ bushels.
Do.....	Spain (salt).....	4.760 pounds.
League (land).....	Paraguay.....	4,633 acres.
Li.....	China.....	2.115 feet.
Libra (pound).....	Castilian.....	7,100 grains (troy).
Do.....	Argentine Republic.....	1.0127 pounds.
Do.....	Central America.....	1.043 pounds.
Do.....	Chile.....	1.014 pounds.
Do.....	Cuba.....	1.0161 pounds.
Do.....	Mexico.....	1.01465 pounds.
Do.....	Peru.....	1.0143 pounds.
Do.....	Portugal.....	1.011 pounds.
Do.....	Uruguay.....	1.0143 pounds.
Do.....	Venezuela.....	1.0161 pounds.
Liter.....	Metric.....	1.0567 quarts.
Livre (pound).....	Greece.....	1.1 pounds.
Do.....	Guana.....	1.0792 pounds.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent
Load.....	England (timber).....	Square, 50 cubic feet, unhewn, 40 cubic feet; inch planks, 600 super ficial feet.
Manzana.....	Costa Rica.....	1½ acres.
Marc.....	Bolivia.....	0.507 pound.
Maind.....	India.....	82½ pounds.
Meter.....	Metric.....	39.37 inches.
Mil.....	Denmark.....	4.68 miles.
Do.....	Denmark (geographical).....	4.61 miles.
Morgen.....	Prussia.....	0.63 acre.
Oke.....	Egypt.....	2.7225 pounds.
Do.....	Greece.....	2.84 pounds.
Do.....	Hungary.....	3.0817 pounds.
Do.....	Turkey.....	2 85418 pounds.
Do.....	Hungary and Wallachia.....	2.5 pints.
Pic.....	Egypt.....	21¼ inches.
Picul.....	Borneo and Celebes.....	135.64 pounds.
Do.....	China, Japan, and Sumatra.....	133½ pounds.
Do.....	Java.....	135.1 pounds.
Do.....	Philippine Islands (hemp).....	139.45 pounds.
Do.....	Philippine Islands (sugar).....	140 pounds.
Pie.....	Argentine Republic.....	0.9478 foot.
Do.....	Castilian.....	0.91407 foot.
Pik.....	Turkey.....	27.9 inches.
Pood.....	Russia.....	36.112 pounds.
Pund (pound).....	Denmark and Sweden.....	1.102 pounds.
Quarter.....	Great Britain.....	8.252 bushels.
Do.....	London (coal).....	36 bushels.
Quintal.....	Argentine Republic.....	101.42 pounds.
Do.....	Brazil.....	130.06 pounds.
Do.....	Castile, Chile, Mexico, and Peru.....	101.61 pounds.
Do.....	Greece.....	123.2 pounds.
Do.....	Newfoundland (fish).....	112 pounds.
Do.....	Paraguay.....	100 pounds.
Do.....	Syria.....	125 pounds.
Do.....	Metric.....	220.46 pounds.
Rottle.....	Palestine.....	6 pounds.
Do.....	Syria.....	5¾ pounds.
Sagen.....	Russia.....	7 feet.
Salm.....	Malta.....	490 pounds.
Se.....	Japan.....	3.6 feet.
Seer.....	India.....	1 pound 13 ounces.
Shaku.....	Japan.....	10 inches.
Sho.....	do.....	1 6 quarts.
Standard (St. Petersburg).....	Lumber measure.....	165 cubic feet.
Stone.....	British.....	14 pounds.
Suerte.....	Uruguay.....	2,700 cuadras (<i>see</i> cua- dra).
Tael.....	Cochin China.....	590.75 grains (troy).
Tan.....	Japan.....	0.25 acre.
To.....	do.....	2 pecks.
Ton.....	Space measure.....	40 cubic feet.
Tonde (cereals).....	Denmark.....	3.94783 bushels.
Tondeland.....	do.....	1.36 acres.
Tubo.....	Japan.....	6 feet square.
Tsun.....	China.....	1.41 inches.
Tunna.....	Sweden.....	4.5 bushels.
Tunnland.....	do.....	1.22 acres.
Vara.....	Argentine Republic.....	34.1208 inches.
Do.....	Castile.....	0.91417 yard.
Do.....	Central America.....	38.874 inches.

Foreign weights and measures, with American equivalents—Continued.

Denominations.	Where used.	American equivalent.
Vara.....	Chile and Peru	33.367 inches.
Do.....	Cuba.....	33.384 inches.
Do.....	Curacao.....	33.375 inches.
Do.....	Mexico.....	33 inches.
Do.....	Paraguay.....	34 inches.
Do.....	Venezuela.....	33.384 inches.
Vedro.....	Russia.....	2.707 gallons.
Vergees.....	Isle of Jersey.....	71.1 square rods.
Verst.....	Russia.....	0.663 mile.
Vloeka.....	Russian Poland.....	41.98 aerea.

METRIC WEIGHTS AND MEASURES.

Metric weights.

Milligram ($\frac{1}{1000}$ gram) equals 0.0154 grain.
 Centigram ($\frac{1}{100}$ gram) equals 0.1543 grain.
 Decigram ($\frac{1}{10}$ gram) equals 1.5432 grains.
 Gram equals 15.432 grains.
 Decagram (10 grams) equals 0.3527 ounce.
 Hectogram (100 grams) equals 3.5274 ounces.
 Kilogram (1,000 grams) equals 2.2046 pounds.
 Myriagram (10,000 grams) equals 22.046 pounds.
 Quintal (100,000 grams) equals 220.46 pounds.
 Millier or tonnea—ton (1,000,000 grams) equals 2,204.6 pounds

Metric dry measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.061 cubic inch.
 Centiliter ($\frac{1}{100}$ liter) equals 0.6102 cubic inch.
 Deciliter ($\frac{1}{10}$ liter) equals 6.1022 cubic inches.
 Liter equals 0.908 quart.
 Decaliter (10 liters) equals 9.08 quarts.
 Hectoliter (100 liters) equals 2.838 bushels.
 Kiloliter (1,000 liters) equals 1.308 cubic yards.

Metric liquid measure.

Milliliter ($\frac{1}{1000}$ liter) equals 0.0388 fluid ounce.
 Centiliter ($\frac{1}{100}$ liter) equals 0.338 fluid ounce.
 Deciliter ($\frac{1}{10}$ liter) equals 0.845 gill.
 Liter equals 1.0567 quarts.
 Decaliter (10 liters) equals 2.6418 gallons.
 Hectoliter (100 liters) equals 26.418 gallons.
 Kiloliter (100 liters) equals 264.18 gallons.

Metric measures of length.

Millimeter ($\frac{1}{1000}$ meter) equals 0.0394 inch.
 Centimeter ($\frac{1}{100}$ meter) equals 0.3937 inch.
 Decimeter ($\frac{1}{10}$ meter) equals 3.937 inches.
 Meter equals 39.37 inches.

Decameter (10 meters) equals 393.7 inches.

Hectometer (100 meters) equals 328 feet 1 inch.

Kilometer (1,000 meters) equals 0.62137 mile (3,280 feet 10 inches).

Myriameter (10,000 meters) equals 6.2137 miles.

Metric surface measures.

Centare (1 square meter) equals 1,550 square inches.

Are (100 square meters) equals 119.6 square yards.

Hectare (10,000 square meters) equals 2.471 acres.



CONSULAR REPORTS.

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TREATMENT OF THE INSANE IN FRANCE.

Since the publication in monthly form of the United States CONSULAR REPORTS—that is to say, since October, 1880—nearly every subject of commercial, economic, hygienic, scientific, and medical importance has been touched upon, with the exception of the care and treatment of the insane. Yet this subject (if I may judge from a number of inquiries received at this consulate from American asylums within the last five years) is quite as important as many others which have received the attention of our consular officers. From personal experience, obtained in answering from time to time the letters above referred to, I am convinced that the United States can profit greatly by adopting not only the system of treatment in operation in French asylums, but by building its institutions after the plan generally observed in this country. It is in view of this fact that the subjoined report has been prepared.

France is, without doubt, the nation which for a century or more has been in advance of all others as regards the treatment and care given to the insane. While the asylums of the United States, England, and most, if not all, other European countries leave much to be desired, those of France are model ones and worthy of the most attentive study and inspection. Nor is it astonishing that such should be the case, for nowhere has the study of mental aberration been pursued with such a degree of application as here. No country can boast of so many magnificent edifices given over to those unfortunate victims of fate who have lost their reason; no country can claim so many celebrated physicians who have devoted their lives to insanity and the insane.

Before the age of Hippocrates, who was practically the first to give attention to the origin and treatment of insanity, those afflicted with the malady were looked upon as beings who, having in some way merited the displeasure of the gods, were suffering the consequences of the latter's anger.

The father of medicine, however, considered lunacy as a mental disorder, and, after the customs of the age, treated it as such. Sadly enough, his investigations and those of his disciples were forgotten, rather than improved upon, by the march of time, for, during the Middle Ages, the victims of phrenitis were tortured and burnt, as later were those who, through their strange behavior, were supposed to be possessed of the devil.

Melancholy appears to have been one of the principal phases of lunacy studied by Hippocrates, though he likewise noted the existence of puerperal insanity, hysteria, and epilepsy. Whether or not there existed asylums for the insane at, or somewhat after, the time in which the great Greek physician practiced his art, remains a matter of conjecture. It is probable that idiots and harmless lunatics were permitted to go about as they pleased. Plutarch, nevertheless, makes mention of certain sanitariums, while Herodotus leads us to suppose that rigorous measures were taken with the insane. But Galen, Celsus, and Asclepiades say nothing of the disease of which this report treats.

It was not until the end of the sixteenth century that the study of the ætiology and treatment of insanity actually received any degree of attention. Those who made special investigations of the subject were Sennert, Plater, Bonet, and Vieussens. In the seventeenth century, Sydenham and Willis were particularly active in their researches; while from the commencement to the middle of the eighteenth century, Sauvages, Lorry, and Cullen did much to enlighten the medical profession on insanity and its mysteries.

But if the result of their inquiries as to the cause and origin of the disease proved more or less fruitful, their treatment of it was atrocious. Lunatics were dealt with worse than prisoners—bled, deprived of light, exercise, and sufficient air; they were frequently put in chains or thrown into dungeons; badly fed and poorly clothed. It is even said that in France the public were admitted to the asylums on Sundays and holidays, where they annoyed and laughed at the inmates. This deplorable condition of affairs continued until 1792, when Dr. Pinel, whose name will for centuries be identified with the progress of medical science, brought about a series of reforms which have existed and been improved upon ever since.

Pinel was born in 1755, studied medicine at Toulouse, and went to Paris when yet a young man. In 1792, he was appointed physician at the insane asylum of Bicêtre, near Paris, where he found the inmates in the state above mentioned. Being not only a skillful physician, but a vigorous writer and speaker as well, he was not long in persuading those in charge of the institution to modify the system then in force. Violent coercion gave place to mild restraint and iron fetters and heavy chains were thrown aside to rust from disuse. Pinel saw that his patients were first well provided for and afterwards took the pains to accomplish what is invariably done to-day—the isolation or separation of one category of lunatics from another. The raving maniacs were relegated to a wing of the asylum specially set aside for them; those less excitable and dangerous to another. The sufferers from melancholia and those whose form of insanity was of a more cheerful nature were

separated. Patients suffering from insanity of an epileptic and paralytic origin and having as little control over their members as over certain other functions (a class aptly characterized in France as "gateux") lived and slept apart from the others. The noisy ones were prevented from coming in contact with the quiet, and so on.

The humane and rational treatment adopted by Pinel was seconded by that of Esquirol, who himself planned a number of asylums. As a teacher, he was unrivaled. Among other noted specialists of this period in France, may be mentioned Trélat, who wrote of, and practically discovered, lucid insanity; Falret; Morel, who gave special attention to hereditary insanity; and Lasègne, who devoted his studies to the various phases of the delirium of persecution. Parchappe, Foville, Marcé, and Leuret also deserve mention among this galaxy of alienists. To them and to their pupils, France owes the high standard of its asylums for the insane and the care given to their inmates.

Of the various ills to which man is subject, none are more dreaded and few are so little understood as that which involves the loss of intellect. Nor can we wonder at our comparative ignorance of the nature of this malady when we consider what mystery hangs over the workings of the mind in its healthy state. But even while our knowledge of the nature of the mind and its operations remains so limited, much may be and is done, toward alleviating the miseries which mental aberration induces, by investigating the causes which influence its prevalence. Some individuals appear to be so prone to insanity that very slight causes are sufficient to induce it in them. It is probable that there is always some peculiarity in the constitution predisposing to it, since the apparent causes do not differ from those which, acting on other persons, produce other diseases and not lunacy. Marcé has given, as among the principal causes, civilization, religious ideas, diathesis, climate, profession, education, emotions, imprisonment, anæmia, cachexy, fevers, pregnancy, parturition, intoxicants, the effects of lead, mercury, opium, belladonna, etc.

The proportion in which the sexes are affected with insanity varies very much in different parts of the world, and statisticians rarely agree on the point. In Great Britain and Ireland, the proportion of male to female insane is stated to be as 13 to 12; in Italy, also, the number of male lunatics is greater than that of female; in France, there are more women than men insane, in proportion of 14 to 11.

The Republic of France is divided into eighty-six departments. These geographical divisions are presided over by prefects, and are, to a certain extent, similar to American States. While the prefect enjoys the functions of a governor, he is responsible to, and receives his instructions from, the Minister of the Interior. The majority of the departments have asylums for the insane, though others have not; some, again, have two. In departments where no asylum exists, lunatics are placed in the hospitals, though certain department establishments of this description receive lunatics from other departments.

The following are the asylums existing to-day in France and the number of persons treated in each during 1894:

Departments.	Number admitted.	Discharged cured.		Transferred.		Number of deaths.		Number remaining December 31, 1894.		
		Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Total.
Aisne.....	183	17	21	17	20	46	33	436	524	960
Allier.....	115	6	6	29	26	36	10	229	257	486
Ariège.....	38	1	1	8	5	11	10	210	214	424
Aveyron.....	85	12	4	9	8	11	19	184	175	359
Bouches-du-Rhône.....	446	33	63	128	147	85	67	487	521	1,008
Charente.....	149	19	21	23	14	46	25	373	326	699
Charente-Inférieure.....	66	13	9	11	3	31	19	249	216	465
Cher.....	103	9	11	24	14	27	18	205	229	434
Côte-d'Or.....	76	12	13	10	14	14	13	142	167	309
Eure.....	142	17	19	17	20	37	26	237	252	489
Eure-et-Loire.....	171	9	10	32	19	29	45	431	451	882
Finistère.....	99	11	13	8	12	25	25	183	251	434
Haute-Garonne.....	103	25		28		52		474		494
Gers.....	184	4	3	43	40	44	65	384	438	822
Gironde.....	57	3	7	2	4	33	17	226	252	478
Ille-et-Vilaine.....	195		18		34		75		707	707
Isère.....	128	8		51		76		433		433
Jura.....	201	30	19	26	20	38	43	341	487	828
Loir-et-Cher.....	199	29	26	32	26	44	39	418	431	849
Lozère.....	184	23	30	18	12	49	28	425	400	825
Maine-et-Loire.....	91	15	19	13	6	20	32	198	287	485
Marne.....	57	7	6	5	4	15	17	177	229	406
Marne-et-Meuse.....	208	25	25	18	34	48	49	338	461	799
Morbihan.....	135	13	24	13	11	60	21	210	283	493
Nièvre.....	149	12	8	17	23	40	33	301	318	619
Orne.....	157	9	8	21	20	36	10	287	385	672
Meurthe-et-Moselle.....	303	48	33	48	43	69	55	822	770	1,592
Meuse.....	124	6	4	12	24	39	31	220	322	542
Morbihan.....	140	13	14	21	17	28	36	231	269	500
Nièvre.....	76	9	8	5	9	12	11	211	241	453
Nord.....	220	40		59		109		730		730
Oise.....	178		35		45		95		1,236	1,236
Orne.....	326	22	25	70	50	78	70	766	671	1,437
Pas-de-Calais.....	147	6	8	18	4	32	19	267	244	511
Basses-Pyrénées.....	136		28		18		70		798	798
Rhône.....	162	13	11	15	14	38	19	364	344	708
Sarthe.....	460	54	42	50	37	121	93	646	824	1,470
Savoie.....	153	30	20	11	16	29	39	254	358	612
Seine.....	117	7	10	12	9	43	30	342	279	621
Seine-Inférieure.....	560	83	16	160	161	86	50	417	359	776
Seine-et-Oise.....	1,371	224	75	205	352	267	101	533	596	1,129
Seine-et-Marne.....	201		43		70		103		1,012	1,012
Seine-et-Vienne.....	221	67		36		98		724		724
Var.....	862	54	23	201	209	162	98	536	505	1,041
Vaucluse.....	746	60	44	136	236	98	94	497	382	879
Vendée.....	289	1	2	18	11	36	16	126	151	277
Vendée.....	248	17	37	36	32	53	57	689	630	1,319
Vienne.....	92	12	9	18	12	21	18	234	180	414
Yonne.....	189	30	24	29	24	54	35	315	312	627
Yonne.....	166	20	15	27	21	42	27	263	271	534
Total.....	11,170	1,178	912	1,790	2,005	2,458	1,898	16,845	18,842	35,687

The insane asylums of France are managed by a director, who is usually, though not necessarily, a doctor; by an attending and an assistant physician, both of whom live in the asylum. Vacancies in the medical staff are filled after competitive examination, and those who enter the service usually remain in it all their lives. They are well paid and have a handsome house within the grounds in which to reside. The establishments themselves are under the direct supervision of the Minister of the Interior, and for this reason the prefect or one of his subordinates is obliged by law to visit them frequently. The visitor must see that everything is properly conducted, offer suggestions to the Government for any radical changes, and make note of any well-grounded complaint presented to him by an inmate. A justice of the peace or a mayor is authorized to do the same thing, and the district attorney, or the official known in France as the "procureur de la republique," must visit the asylum of his district at least once every three months.

No private asylum for the insane is permitted to exist except by authorization of the Government, and where institutions of this description do exist, they are subject to the same rules, regulations, and laws as are those under direct control of the State.

No person is admitted to an insane asylum in France at the request of family or friends without—

- (1) A written demand made by a relative or acquaintance, as follows:

The Director of the Asylum of ———.

SIR: We, the undersigned (here give the names, ages, residences, etc.), have the honor to advise you of the fact that Mr. (or Mrs.) ———, our ——— (sister, brother, or cousin, as the case may be), is insane, as proven by the annexed medical certificate signed by Dr. ———, and desiring to have Mr. (or Mrs.) ——— receive proper treatment, we beg of you to admit him (or her) to your asylum.

[Signatures.]

- (2) A certificate signed by a physician attesting that the person whose confinement is demanded is actually insane. This certificate must be given within a period of fifteen days previous to that on which the patient is admitted, and the physician signing it must not be a relative of the afflicted person. It must give a specific description of the nature of the malady, whether it be melancholia, religious mania, persecution, etc., and can only be dispensed with in cases where the insane person is so violent that his or her admission into the asylum necessitates the doing away with formalities. Within twenty-four hours of the time when the lunatic is admitted, one of the physicians of the asylum must send this certificate, together with one of his own, to the prefect of the department in which the establishment is situated.

Fifteen days subsequent to a patient's admission, a physician living in the asylum must send another certificate to the prefect. In this, he must state plainly the exact condition of the person under treatment, the results of his own personal observation, etc. In most French asylums, we find wards set aside for those persons who have just been admitted, where they may be

better observed than they could possibly be were they placed at once among the other inmates.

As soon as a sufferer from insanity is admitted to an asylum he or she is minutely interrogated by the resident physician. Relatives and friends are also questioned and the inmate is registered as follows :

INSANE ASYLUM OF——

Department	Name, ——
of	Place of birth, ——
——	Age, ——
Year——	Profession, ——
Folio——	Date of entry, ——
Diagnosis——	Date of discharge, ——
	Date of death, ——

Résumé of the patient's life.

Diseases existing in the family.

On father's side, ——

On mother's side, ——

Physiological antecedents.

Fetal life:

Birth:

Dentition:

Childhood:

Youth, puberty:

Menstruation:

Pregnancy:

Parturition:

Menopause:

Old age:

Morbid antecedents.

Diathesis:

Nervous diseases:

Fevers:

Inflammatory diseases:

Surgical operations:

Miscarriages:

Parturition:

Puerperal maladies:

Presumed causes.

Physical:

Moral:

Prodromes.

Condition of the patient when admitted.

General observations.

An inmate of an asylum may be discharged, or his liberty restored, by the same process through which he or she was admitted. If, however, the

physician in charge considers the lunatic dangerous, the case may be submitted to the prefect, who decides whether or not public safety demands the patient's retention. The prefect is also allowed by law to order the confinement of any person whom the police assure him to be dangerous.

The chief advantage the insane asylums of France have over those of the United States is (1) that they are, for the most part, built in the country, at a short distance—let us say 2 miles—from large cities; (2) in place of being four, five, or six stories in height, they never have more than three, and usually two, stories, and some consist only of ground floors, in order that they may be spread over as much space as possible; (3) every ward has a promenade or quadrangle of its own, shaded by trees, in which patients can enjoy an abundance of fresh air.

While the greater number of inmates in asylums for the insane are cared for at the expense of the department, all institutions of this description have especial accommodation for patients whose families can afford and desire to pay. There are usually four classes. The first offers accommodation, food, medical and other attention, etc., at \$1.40 per day, the second at 90 cents, the third at 70 cents, and the fourth at 50 cents per day.

In the department of La Gironde, in which the city of Bordeaux is situated, there are two asylums for the insane, one for women, the other for men. The asylum for men is situated at Cadillac, a place about 20 miles from Bordeaux, while that for women is about five minutes' walk from the city limits. The latter, known as the Asile de Château Picon, is one of the finest in France, so that in giving a description of it I shall describe not only a model establishment, but the workings, management, and system of others similar to it.

The institution is surrounded by about 20 acres of ground, in itself a veritable park. Entering a large gateway and crossing a well-kept lawn, we find ourselves at the administration building, which is given over entirely to offices, reception rooms, apartments for the filing of documents, the pharmacy, etc. At the right side of the gate as we enter are separate buildings in which reside the director, resident physician, and chief accountant. To the left are a number of villas occupied by lunatics whose families pay at the rate of \$1,200 a year for their care. Behind the administration building is the asylum proper. A comprehensive idea of the whole is obtained from the plan herewith. The plan does not comprise the buildings where the pay patients are treated, but is sufficient to show the general principle on which French asylums are built.

Each ward is under the direction of a sister of charity, assisted by six or eight female nurses. In asylums given over exclusively to the treatment of male lunatics, the attendants are, of course, men, though the cooking, washing, etc., is done by sisters.

It will be observed that at the asylum of Château Picon the kitchen is situated in the middle of a long corridor, from which access is obtained to all the wards. This makes the distribution of each repast very simple. The

following bill of fare, taken at random from a number of others, shows the dishes served to the several classes of inmates:

First class.—Breakfast: Coffee, chocolate, milk, and bread and butter. Lunch: Soup, bœuf à la mode, roast veal, tomatoes, and fruit. Dinner: Soup, roast beef, chicken, mashed potatoes, and fruit and pastry.

Second class.—Breakfast: Coffee, chocolate, milk, and bread and butter. Lunch: Soup, fish, beefsteak, and fruit. Dinner: Soup, roast veal, mutton stew, and fruit.

Third class.—Breakfast: Coffee, chocolate, milk, and bread and butter. Lunch: Soup, beef stew, and tomatoes. Dinner: Soup, chops, and mashed potatoes.

Fourth class.—Breakfast: Soup. Lunch: Soup and beef. Dinner: Soup and vegetables.

The food is carefully cut in the kitchen before it is served, and every patient has a glass of claret with each repast.

The director of the asylum of Château Picon is Dr. J. G. Calès and the resident physician is Dr. J. Pons. To Dr. Pons, I am indebted for all the facts, information, and statistics embraced in this report, and avail myself of this occasion to express to him my thanks not only for his valued aid, but for the exceptional interest taken in the work. This gentleman has been for many years attending physician first at the insane asylum of Marseilles, afterwards at Pau, and for the past eight years at Bordeaux. He is a recognized authority on mental aberration and the care and treatment of the insane, and for this reason, I was particularly fortunate in being able to visit, in his company, the institution to which he is attached.

The doctor rises early, and at half past 7 is in his office. On his desk, he finds a report which gives at a glance a résumé of what has occurred during the preceding day and night. It is made out as follows:

Date, — 189 —	Beds.														Patients engaged in—													
Names of wards.	Existing.	Occupied.	Vacant.	Sisters.	Nurses.	In straight jackets.	Attached to bed.	Epileptics.	Children.	Semigâteuses.	Gâteuses.	Simple baths.	Therapeutic baths.	Visits received.	Promenades.	Admissions.	Departures.	Deaths.	Escapes.	Refusing food.	Sewing.	Washing.	Ironing.	Knitting.	Cooking.	Embroidering.	Outdoor work.	General work.
Foville.....																												
Dumesnil.....																												
Esquirol.....																												
Pinel.....																												
Parchappe.....																												
Lunier.....																												
Morel.....																												
Bazin.....																												
Dénucé.....																												
Total.....																												

From this table, carefully filled up, the doctor can see precisely what has occurred in each ward since his last visit—that is to say, the day before. For more minute details, he has merely to question the sisters in charge.

At 8.30 a. m., the resident physician starts on his regular morning round of the wards, examining each patient in turn, prescribing shower baths for

those in a state of depression and opiates or bromides for those suffering from acute mania or excitation. Dr. Pons, both through the attention he gives his patients and his kind treatment of them, is very much liked by the inmates. At the asylum, there are several English, Spanish, and Italian subjects, and with these the physician converses as fluently as with those of his own nationality. He visits first the cells. These are apartments about 8 feet square and 10 feet in height, with a window near the ceiling. The doors are of wood $2\frac{1}{2}$ inches in thickness and provided with a small aperture through which the inmate may be seen from without. Each cell is provided with a water-closet, and lighted at night by means of electricity. Those patients who have no suicidal intentions are provided with a comfortable bed, though others are, of necessity, forced to sleep on straw. Patients who might use their bedclothes or garments to strangle themselves are dressed in a suit forming coat and trousers, buttoned up the back. While allowing perfect freedom of movement to the lunatic, it can be neither taken off nor torn.

From the cells, the doctor visits the other wards and quadrangles, inspecting in turn the epileptics, the noisy, the quiet, etc. This tour comes to an end at noon.

The building for the patients who pay at the asylum of Château Picon is magnificent. The private dwelling of a wealthy resident of New York or Washington could not be more richly or handsomely furnished. Patients paying at the rate of \$1.40 per day have a suite of apartments consisting of a parlor, dining room, bedroom, etc., while those paying less than this have a bedroom quite as handsomely furnished as the suites.

At the time of writing (September 25, 1895), there are 740 women confined in the asylum of Château Picon, and the number is constantly increasing. This fact, however, is no indication that insanity in France is on the increase. The superior management of French lunatic asylums of the present day causes many more persons to be conveyed to them than formerly. Accordingly, published statistics are of little value in determining the prevalence of insanity in any country.

The following tables show the number of patients admitted during 1894 to Château Picon, the number deceased, transferred, escaped, etc.:

Number of persons admitted in 1894.

Description.	Simple insanity.	Alcoholic insanity.	Paralytic insanity.	Senile dementia.	Idiocy.	Doubtful.	Total.
Admitted for first time.....	96	1	23	33	10	1	164
Admitted for second time.....	12				1		13
Admitted after escape or departure.....	12	1		2	2		17
Admitted from other asylums.....				1			1
Total.....	120	2	23	36	13	1	195

Number of persons discharged, deceased, etc., in 1894.

Description.	Simple insanity.	Alcoholic insanity.	Paralytic insanity.	Senile dementia.	Idiocy.	Doubtful.	Total.
Discharged cured.....	16		1		1		18
Discharged as convalescent....	9		1				10
Escaped.....	1		1				2
Transferred to another asylum.	5				2		7
Discharged for various causes..	49	1	3	4	7	1	65
Deceased from effects of illness.....	14		16	43	2		75
Total.....	94	1	22	47	12	1	177

Résumé, 1894.

Description.	Simple insanity.	Alcoholic insanity.	Paralytic insanity.	Senile dementia.	Idiocy.	Doubtful.	Total.
Number existing January 1, 1894.....	486	6	50	98	49		689
Number admitted in 1894.....	120	2	23	36	13	1	195
Number existing and admitted in 1894.....	606	8	73	134	62	1	884
Number discharged in 1894.....	94	1	22	47	12	1	177
Number remaining December 31, 1894.....	512	7	51	87	50	1	707

The receipts and expenditures of the asylum for 1894 were as follows :

Receipts.

	Francs.
From families of pay patients.....	444,152.00
From work done by inmates.....	10,494.76
From garden produce of asylum.....	10,025.16
Various.....	26,018.21
Total.....	490,690.13

Expenditures.

Paid for working material.....	3,433.73
Disbursed for cultivation of vegetables, etc.....	7,996.94
Disbursed to personnel of asylum.....	73,312.18
Other.....	279,294.11
Total.....	364,036.96

From the foregoing, it is evident that the asylum is not only self-sustaining, but that for the year 1894, there remained a balance of 126,653.17 francs (\$24,444.06) in its treasury.

Having already followed the resident physician on his regular morning visit, we may give our attention to the general treatment of the insane in French asylums.

The duration of insanity has no certain limits. The attack may last a few weeks or it may continue for years; it is not uncommon to meet in asylums

with persons who have been insane twenty or thirty years. When the disordered state of the mind is protracted, it usually terminates in total loss of the intellectual faculties. The state of imbecility or dementia which then succeeds has many degrees. It commences by the loss of memory, particularly for more recent events. The mind receives impressions and perceives them, but the faculty of retaining them seems to be lost. Frequently, words which were spoken but a few minutes previously are forgotten, though the memory for events long gone by is quite distinct. In a second degree of imbecility, the power of directing the thoughts is lost; ideas come and go without order and independently of the will; questions are still heard and attempts made to reply to them, but before the answer is half completed, the train of thought is lost and the mind and tongue reduced to a state of inanity. The features are void of expression, the countenance vacant, the eye wandering. At last, even the instincts are lost, and the sufferers, careless of the calls and wants of nature, sit or lie motionless. The chances of recovery vary much according as the insanity is complicated or not with other diseases; it is also influenced by the form of the disease, the period of its course, the age, sex, and condition of the patient. Of the diseases which frequently complicate insanity, epilepsy and paralysis are the most often noted. If paralysis affects the motion of the limbs, the speech, or both, the case is generally considered hopeless. Complication with epilepsy is equally unfavorable. General intellectual derangement is more curable than monomania. Imbecility is usually incurable. The period at which mental aberration is brought under treatment has an important influence on the chance of recovery. Of those who enter asylums soon after the commencement of the malady, five out of eight recover. After the third year of the disease's appearance, the proportion of cured is not more than one in thirty. The age most favorable for recovery from insanity is the period from the twentieth to the thirtieth year; few recover after the fiftieth. During the period of convalescence, there is great liability to relapse.

The treatment of insanity in France resolves itself into the medical and the moral. The medical treatment indicated at the commencement of the disease consists chiefly in the attempt to reduce increased nervous or cerebral excitement. In the more chronic conditions of the disease, the medical treatment is chiefly directed to the restoration and maintenance of a healthy state of all the functions of the body. A strengthening diet, cleanliness, fresh air, and exercise are all necessary. The asylums of France afford all these requirements. Physical restraint, except in cases of absolute necessity, is avoided, and one never hears in this country of the outrages perpetrated by guardians such as frequently come to light elsewhere.

The attending physicians of French asylums know all their patients by name, the exact nature of their insanity, and the measures which usually appear to calm them. The slightest change in a sufferer is noted, and he or she is transferred from one ward to another as occasion requires. As far as food, attendance, and interior luxury go, many of the inmates are better off than

in their own homes, and it is for this reason that the insane asylums of the Republic of France serve as models for the whole world.

JOHN PRESTON BEECHER,

Vice-Consul.

BORDEAUX, *September 25, 1895.*

BRADFORD TRADE WITH THE UNITED STATES DURING 1895.

The consular district of Bradford has just concluded the most prosperous year in its history of trade with the United States. The total value of declared exports (manufacturers' or exporters' prices) for the year ending December 31, 1895, was \$27,745,096.60. This exceeds the trade of the best year previous thereto (1889), when the total was \$22,835,594.31, by just \$4,909,502.29. It exceeds the next best year (1890), when there was an extraordinary rush to get in goods before the McKinley Tariff went into effect, by close to \$8,000,000, or, to be exact, \$7,731,041.25. The increase over 1894 is \$19,529,862.22.

The fact that nearly \$28,000,000 worth of goods and material should be shipped from one town of Great Britain in a single year may seem astounding to the reader. It should be remembered, however, that the Bradford district has always done a large business with the United States, the amount depending not upon favorable tariffs alone, but upon demand resulting from changes of style or fashion or varying economic conditions. Undoubtedly, the new tariff was favorable to larger imports from Bradford, but only for a portion. During the financial depression of 1893 and 1894, importers only purchased what they could actually use at the time, and buying by merchants of all grades—retailers, jobbers, wholesalers, and importers—was delayed pending the settlement of the tariff question. The consumer, also, husbanding his resources, bought less clothing. Therefore, there was neither home nor foreign demand. The year 1895, however, opened up under the most favorable conditions Bradford has ever known in her trade with the United States. In addition to a lower tariff and a return to prosperous conditions, there was almost three years' demand condensed into one on the part of buyers. There had also been changes in fashion in favor of Bradford goods, especially with reference to mohairs and dress goods like crêpons, serges, mohairs, and lusters. For a number of years the dress-goods trade had been slipping away from Bradford and locating at various points on the Continent.

For the year 1895, the items of dress goods and linings, under the head of "stuffs," leads the list, showing a total valuation of \$9,748,527.40; worsted coatings, which seem to be considered by United States competitors as the more important, come next, with a declared value of \$8,561,-228.25; woolen goods are third, with a value of \$2,297,527.05; and cotton

goods fourth, valued at \$1,121,020.77. It may be of interest to analyze some of the figures presented. Of completely finished goods paying duties of varying amounts under the tariff schedule, there were declared goods valued at \$22,171,129.98, as appended:

Articles.	Amount.	Articles.	Amount.
Carpets and rugs.....	\$193,106.17	Stuff goods.....	\$9,748,527.40
Cotton goods.....	1,121,020.77	Tape, braid, etc.....	8,525.27
Hair cloths.....	60,467.91	Tapestry, damask, etc.....	10,066.67
Hemp bagging.....	22,351.37	Woolen goods.....	2,297,527.05
Ready-made clothing.....	489.60	Worsted coatings.....	8,561,228.25
Shawls.....	9,054.25	Total.....	22,171,129.98
Silk goods.....	138,765.27		

Of these, it will be seen the greater demand has been controlled by the fashion for dress goods and linings and the long-pent-up demand for worsted coatings, of which the market was bare. Woolens, which are now an important item, were totally prohibited by the duty levied by the tariff of 1890. The goods shipped in this line have been of a very cheap grade used for men's overcoats, women's cloaks and jackets, and material of the melton, kersey, or beaver order for ready-made clothing. The price of these goods here ranged from 15 to 90 cents per yard, the latter for a curled goods of rather a higher type. These goods, in bulk, would take up more space than all the other exports from this point put together.

EXPORTS FOR THE BENEFIT OF UNITED STATES MANUFACTURERS.

There have also been large shipments of raw and semiraw material and machinery and appurtenances from this point, which indicate extraordinary activity on the part of the American manufacturer, as they are imported by the manufacturer for his use. It may be truthfully said that the general trading public here look upon such shipments with apprehension, as portending direct competition with home manufacturers. Here are some items that come under this head:

Articles.	Amount.	Articles.	Amount.
Wool.....	\$2,975,547.21	Mohair (angora goat).....	\$12,799.35
Shellac.....	3,703.10	Mohair waste.....	2,959.70
Oil cake.....	6,353.09	Noils of wool, etc.....	79,915.31
Miscellaneous.....	1,147.09	Rags.....	26,953.57
Machinery.....	377,352.78	Rovings of wool, etc.....	45,690.41
Grease for soap manufacturing.....	14,905.52	Shoddy.....	2,984.63
Chemicals used in manufacturing.....	3,543.50	Silk waste.....	9,055.51
Card clothing (used in carding machinery).....	147,585.40	Skins.....	427.65
Bristles.....	734.84	Tops of wool.....	232,639.90
Alpaca (hair of the goat).....	11,430.32	Worsted waste.....	126,276.70
Camel's-hair tops and noils.....	35,031.04	Yarns:	
Cotton (raw Egyptian).....	40,730.96	Worsted and mohair.....	616,425.75
Cow and calf hair.....	16,927.61	Silk.....	327,039.26
Iron, steel, etc.....	212,799.71	Other.....	69,342.58
Leather.....	42,370.10	Total.....	5,542,632.52

It will be seen from the foregoing that American manufacturers have purchased over \$5,500,000 worth of materials for use in their business from the seat of their competitors on the English side of the water. There were also imported large quantities of Italian cloths (for linings) in the gray and then dyed in the United States. Some entirely finished worsted coatings were also purchased by manufacturers.

A GIFT TO LICK OBSERVATORY.

While the Bradford district was making a handsome thing out of the United States in trade, it was also giving something in return. There will be noticed in the yearly returns the items—

Telescope.....	\$6,813.10
Scientific instruments.....	2,919.90
Total.....	9,733.00

This refers to a magnificent telescope, with all adjuncts and paraphernalia, presented to the Lick Observatory in California by Edward Crossley, a carpet manufacturer at Halifax, near Bradford, well known for his philanthropy and for his love of astronomy. As they were gifts for a public institution, they were, of course, admitted free of duty, but were declared in the ordinary way to show their character.

NEW EXPORTATIONS.

Among the new items, are wines and spirits (\$865.45), which may seem an odd export from a woolen and worsted center. This value includes invoices of champagne and Scotch whisky purchased by Americans when in Bradford. Ready-made clothing to the extent of \$489.60 was shipped as an experiment, but did not succeed. Shellac is a new item of the year. The raw cotton mentioned in the schedule is Egyptian cotton purchased through a Bradford house and shipped to Boston. One lamp-post (\$32.10) is the acquirement of a New York man to put up in front of his residence. Bristles have never appeared in a Bradford return heretofore, but are now down for \$734.84. Cow and calf hair has been a regular export. Rovings, noils, tops, waste, rings, laps, etc., of the various wools and hairs have mostly sprung into prominence in the last year.

PRICES.

Prices, which were very low at the beginning of the year, commenced to rise in the autumn with the upward bound of mohair, settled back to about the old figure in November, and then had another rise. Worsted coatings are now being purchased at from 2 to 4 cents per yard in advance of the reigning price of 1895, and other goods in proportion.

RETURNS FOR 1895.

Appended is the complete itemized list by quarters for 1895, showing full totals for the year.

Value of declared exports from the consular district of Bradford to the United States during the four quarters ending December 31, 1895.

Articles.	Quarter ending—				Total
	March 31.	June 30.	September 30.	December 31.	
Alpaca.....			\$1,929.82	\$9,500.50	\$11,430.32
Bristles.....				734.84	734.84
Buttons.....	\$96.35				96.35
Camel's-hair tops and noils.....	7,226.70	\$7,005.85	2,824.72	17,973.77	35,031.04
Card clothing.....	34,060.60	31,250.45	39,861.20	42,413.15	147,585.40
Carpets and rugs.....	69,358.80	18,312.50	89,230.37	16,154.50	193,106.17
Chemicals.....	1,811.00	587.75	971.53	173.22	3,543.50
Cotton.....	4,786.75	18,073.55	17,870.66		40,730.96
Cotton goods.....	368,642.75	282,978.55	224,994.87	244,404.60	1,121,020.77
Cow and calf hair.....	3,680.70	2,279.67	2,295.52	8,671.72	16,927.61
Furniture.....		412.20	93.20		505.40
Grease, etc.....		3,331.15	2,838.56	8,735.81	14,905.52
Hair cloths.....	15,696.85	18,487.05	18,470.13	7,813.88	60,467.91
Hardware.....				589.58	589.58
Hemp bagging.....	5,442.60	4,835.47	2,995.10	9,078.20	22,351.37
Household effects.....				194.67	194.67
Iron, steel, etc.....	45,190.55	64,237.65	43,984.38	59,387.13	212,799.71
Lamp-post.....	32.10				32.10
Lanterns and slides.....	1,970.95	2,064.50	7,131.57	2,469.38	13,636.40
Leather.....	9,781.10	10,816.75	9,099.68	12,672.57	42,370.10
Machinery.....	111,486.00	75,990.85	61,137.38	128,738.55	377,352.78
Miscellaneous.....	532.20		551.63	63.26	1,147.09
Mohair:					
Goat's hair.....	28,679.95	29,415.15	45,150.18	9,554.07	112,799.35
Waste.....				2,959.70	2,959.70
Noils.....	17,409.65	7,491.90	36,612.46	18,401.30	79,915.31
Oil cake.....	734.00	1,613.38	1,469.46	2,536.25	6,353.09
Paper.....	1,558.30	1,496.05	1,724.56	695.38	5,474.29
Rags.....	7,361.00	6,559.35	10,958.10	2,075.12	26,933.57
Ready-made clothing.....	489.60				489.60
Rovings.....	16,748.55	25,849.75	3,052.11		45,650.41
Rubber cloths.....	206.80				206.80
Scientific instruments.....			2,919.90		2,919.90
Shawls, etc.....	3,556.80	767.10	3,286.10	1,444.25	9,054.25
Shellac.....		3,703.10			3,703.10
Shoddy.....		1,310.05	1,674.58		2,984.63
Silk:					
Goods.....	39,602.20	24,103.60	47,895.15	27,164.32	138,765.27
Waste.....	2,725.50	2,659.17	1,840.00	1,890.83	9,055.50
Skins.....	115.60			312.05	427.65
Stuff goods.....	2,390,086.45	2,227,968.40	2,711,627.65	2,418,844.90	9,748,527.40
Tape, braid, etc.....	2,717.95	1,899.72	984.00	2,923.60	8,525.27
Tapestry, damasks, etc.....	5,942.70	250.00	2,206.87	1,667.10	10,066.67
Telescope.....		6,813.10			6,813.10
Tops.....	146,333.30	13,607.60	54,587.05	18,111.95	232,639.90
Waste (worsted).....	18,870.20	20,618.20	40,516.45	46,271.85	126,276.70
Wines and spirits.....	791.55			73.90	865.45
Wool.....	544,991.15	641,981.20	1,088,057.51	700,517.35	2,975,547.21
Woolen goods.....	379,648.95	610,051.40	809,969.30	497,857.40	2,297,527.05
Worsted coatings.....	2,171,610.30	1,885,729.65	2,241,418.80	2,262,469.50	8,561,228.25

Value of declared exports from the consular district of Bradford, etc.—Continued.

Articles.	Quarter ending—				Total.
	March 31.	June 30.	September 30.	December 31.	
Yarns:					
Worsted and mohair.....	\$185,447.85	\$173,999.80	\$167,537.50	\$89,440.60	\$616,425.75
Silk.....	109,683.55	83,302.16	55,262.70	78,790.85	327,039.26
Other.....	8,102.80	13,719.78	25,765.30	21,754.70	69,342.58
Total.....	6,763,210.70	6,325,573.55	7,880,846.05	6,775,466.30	27,745,096.60
Total, same period in 1894..	1,275,036.28	1,257,016.75	1,946,001.80	3,737,179.55	8,215,234.38
Increase.....					19,529,862.22

CLAUDE MEEKER,
Consul.

BRADFORD, *January 6, 1896.*

REVIEW OF BRADFORD TRADE FROM A LOCAL STAND-POINT.

I beg to submit herewith a report containing abstracts from the Bradford Annual Trade Review, as published by the Bradford Observer. The extracts cover those portions of the review dealing with the American trade.

THE TRADE OF BRADFORD WITH THE WORLD AND PARTICULARLY WITH THE UNITED STATES.

The Annual Trade Review of the Bradford Daily Observer is always eagerly looked for, giving as it does the only comprehensive and statistically correct review of the trade of the town with the rest of the world. In the number just issued the editor introduces his conclusions as follows:

In all probability, the year just closing upon us will come to be regarded as the most extraordinary of the waning century, so far as the Bradford trade is concerned. It has been so different from an ordinary year, so much better than the most sanguine could have anticipated, so unlikely to be paralleled in the near future, that in the history of the worsted trade in the nineteenth century, the year 1895 is likely to stand out as unique. Still, as this year testifies, "it is the unexpected that always happens," and it may even be that 1895 will be eclipsed in glory by some later year. All we can say is that, though it is within the range of possibility, it is exceedingly unlikely that such an eventful year will be found before we finish the present decade and century.

Of the two great factors in bringing about this improved state of affairs—the more reasonable tariff conditions adopted by the United States and the revived fashion for bright goods—the former has no doubt been the more important, although at first it did not seem to make much difference. In our last year's review, we pointed out that in the case of wool, there must be in existence an accumulation which must needs be worked off before we could expect prices to be affected; and thus, for months after it had become apparent, through consular returns, that the consumption in worsted coatings and stuffs must be upon a much larger scale than usual, the market for wool remained dull and lifeless. The movement appeared to originate with mohair—a material of insignificant importance when compared with the

enormous bulk of Australian and New Zealand wool. But there can be no doubt that it was the other side of the Atlantic from which came the impetus that has improved not only our own local industry, but the trade of the world. Bradford manufacturers took orders for coatings, but France and Germany also felt the new pulse. The yarn trade began to be more lively, other industries, like the iron trade, revived, with the consequence of a new hopefulness for our own home trade, new projects in Africa stirred the blood of moneyed men, and capital once more began to flow in channels which had for years been frozen up. Thus, with the advent of spring and the discovery that there really was something in the bright trade this time, there was a sudden revulsion of feeling; men threw off the depression, and became young and buoyant once more, and we all felt the influence. But youth is impetuous, and when sober business men yielded to the new enthusiasm they went too far, and we have had a rather sharp reaction in consequence. As a matter of fact—though this is not a popular doctrine in Bradford—the lower prices and the check upon new business are alike healthy signs, for it looked at one time as if the “boom” would reach dimensions which would prove seriously hurtful to business interests and might have landed us in disaster.

Apart, however, from the large American trade and the rage for mohair and luster goods, there is not much room for congratulation. Our export of manufactured goods to European countries is again less than it was in the previous year, and is balanced by an almost similar import of similar goods from the Continent. Australia, South Africa, Canada, and the South American republics do not show any marked improvement over recent years, and the Eastern trade has felt the paralyzing influence of the Chino-Japanese war. The export of yarns continues to grow apace, the shipments of mohair yarns in particular having increased 60 per cent. But although spinners have had a good time, the export trade in yarns unquestionably helps our competitors in manufactured goods, and is not, therefore, an unmixed benefit to Bradford. There is, indeed, some danger lest the blessings of to-day should blind men to the fact that they must work for those of to-morrow, if they would have them. The American trade will not be maintained without an effort, and may, indeed, fall away to much more moderate dimensions, and we know that fashion is a fickle jade, who may desert us unless we can keep her in good humor. This review of the past year ought to suggest the question, What next? It is only as the trade as a whole is determined that it will be ready with an answer that we can hope for prosperity in the future.

HINTS FOR AMERICAN MANUFACTURERS AND MERCHANTS.

There may be in the appended lines, taken from the review, suggestions that could be adopted with favorable results by manufacturers and distributors in the United States:

There is no doubt that, on the whole, Bradford goods are better value to-day than they ever were before, leaving out of consideration, of course, the advance in prices this year. Our manufacturers, dyers, and finishers have all made great forward strides, and the trade is better equipped as regards machinery and organization. The introduction of the *crépon* and the enterprise and success with which this new weave was taken up are strong testimony to the capabilities of our manufacturers. It is universally admitted that the success of our French and German competitors is largely due to their faculty of adapting themselves to the circumstances of the trade, and it is precisely in the adaptability which Bradford has shown in this matter of *crépons* which is so full of encouragement. Notwithstanding the universal fashion for bright goods seems to prove the contrary, the demand of to-day is undoubtedly for variety and novelty. The cost of making up a dress is now so great that it is not worth while to try to save a few pence per yard in the cost of the material, and hence there is a constant call for goods of higher class. Here, then, is the opportunity for thought, skill, and originality, and if Bradford men will devote themselves to the production of that which is new, original, and beautiful, there is no reason why a large part of our home trade should not be recaptured from our foreign rivals. Our methods of doing business also are capable

of improvement, and much of the success which the foreigners meet with in London may be put down to their careful anxiety to please their customers. Selling with them is rarely left to employees—it is the special work of the principal, who thus keeps in touch with the requirements of the trade.

The wholesale furniture manufacturing industry is a rapidly growing one in our midst. There are large works in Bradford, Shipley, and Keighley, where furniture is made for all parts of the country. This gives increased importance to the trade in furnishing fabrics, and the outlook for the coming year in this class of goods is far better than it was twelve months ago.

In passing, we may record as a pleasant fact, and one which we may take as a good augury for the future, that it has been found necessary in the interests of the trade to greatly enlarge the floor area of the Bradford Merchants' Exchange.

THE DEMAND FOR BRIGHT GOODS MAKES A MARKET FOR ENGLISH WOOLS.

Under the wool heading, the editor rejoices over the return of luster goods to fashion, thus making a demand for crossbreds and English wools. He writes:

The cloud which has hung so persistently over the old Bradford trade for more than twenty years has at last lifted. The brightness which has supervened, somewhat after the manner of the wolf in the ancient fable, has been so sudden and intense as to bewilder the footsteps of the commercial world. Many times during the long depression has been raised the cry that luster was coming into fashion again, and the cry has died away as suddenly as it arose, leaving behind it an increase of the encircling gloom. When, therefore, the suggestion arose at the beginning of the year that bright goods were likely to receive more attention, the idea was received both by the wise and the unwise as a preposterous attempt to give life to the dead.

How thoroughly this view prevailed may be seen by referring to our wool tables, which show that for a period of six months, during which time large orders must have been placed for luster fabrics, the price of Lincoln hoggs preserved a uniform dead level of $9\frac{3}{4}$ d. Indeed, so utterly unbelieving were the wool staplers that, as late as May, they were doing their utmost to clear out their old stocks to prepare for the new clip. Many sales were made at $8\frac{5}{8}$ d., and even some at $9\frac{1}{2}$ d., with the anticipation that, after the long depression, the new wool would be bought very cheap and that the new clip would recoup the sellers for their losses on the old. The end of May was, indeed, a phenomenal time. Although, at that moment, we had an increase in our local exports to America for the five months of nearly £2,000,000, and spinners and manufacturers were getting busier every day, there was on the part of wool dealers a unanimity of obstinacy in the belief that wool must keep low that was surprising to us at the time, and we were at times tempted to put down our failure to comprehend it to our want of practical knowledge of the trade. We have since come to the conclusion that, even in the wool trade, lookers-on sometimes see the most of the game.

When the first upward movement did come, there were many dealers who took the first advance with avidity, and sold out not only all their cheap purchases, but took orders where a little above the market price could be obtained without being actually covered. As the farmers soon got wind of the improvement, it became impossible to cover. Higher prices were daily asked, and those traders who promptly threw over their preconceived ideas and bought their country clips regardless of the Bradford market of the day did very well, while to the cautious ones, the first advance was of very little advantage. As will be seen when we come to deal with mohair, that article had given the lead to the market, but up to about 18d. or 19d. the advance therein was treated by the wool trade with stolid indifference. There came a moment, however, when the wool trade appeared to wake up. Manufacturers found themselves full of orders before the clip was fairly on the market. They not only cleared every fleece of bright wool off the Bradford market, but urged their wool-stapling friends to buy at the best price they could. The result was about the smartest rise we have seen for a

generation. In four weeks, Lincoln hogs went up from 10d. to 14½d., or an advance of 45 per cent. During July and part of August, there was a slight reaction to 14d., which was, however, succeeded by another smart advance to 16½d., which probably did not cover more than three weeks. At that point, it remained steady for about a month, but during the last three months the business has been very small, and the price has gradually crept downwards until to-day, when probably not more than 15½d. could be made. The quantity being used is still large, and the country is practically cleared. The future course of prices, therefore, is in the hands of holders here, be they speculators, dealers, or manufacturers.

It is hardly trenching upon the realms of prophecy to say that the first advance to 14½d. was the legitimate effect of revived demand for luster goods, that the second advance to 16½d. was the result of fright, excitement, and speculation, and that, unless there are signs of renewed activity in the piece market shortly, the tendency of prices will be back toward the 14½d. level, which may be regarded as a basis firmly supported by the real business demand.

SOFT WOOLS DID NOT AT FIRST RESPOND.

During the period in which luster wool was making its first upward movement, merino wool, which had been very flat for the previous three months, experienced a further drop in prices, which took it down to the very lowest point ever known. First-class botany 60s touched 16½d., which was relatively a lower point than had been reached during the intense depression in Buenos Ayres tops some time previously. This was looked upon as quite natural. The parochial instinct dies hard, and still thought that the world was not large enough to run a flourishing luster and a flourishing merino trade at the same time. It was, of course, to be regretted that the soft trade, which had been such a help to us during our evil days, should be in a depressed condition, but it could not be helped. The merino trade had had its day, and it was only fitting that the big brother should retire for a while until the little one had his innings. The drop, therefore, of a penny in 60s tops during May-June was only a fitting corollary to the advance of 3d. in luster wool during the same period.

From the middle of June, however, the merino market showed a steady recovery from 16½d. for 60s tops to 22¼d. for the same article in September, an advance which represents many times more money in pounds sterling than the whole of the luster clip is worth. In this branch of our trade, too, the final 2d. of the advance was due to fear and excitement, which caused overbuying to a large extent, for it can not be said under such circumstances that there was any pure speculation. When people wake up and find that their preconceived notions are wrong, they are apt to fly to the other extreme.

From September to November, there was a strong downward movement, which landed 60s to 19d. At this point, depression was again marked, and dealers looked forward to the opening of the November sales, not, indeed, with any hope of relief, but more with the apprehension that they would then know the worst. When, therefore, these sales at the opening did not show the expected reduction of 7½ to 10 per cent, there was a great feeling of relief, and the market acquired confidence from the fact that in many sorts prices were really no lower than in the previous sales, and 60s tops recovered to 20d., a price at which they may be considered pretty sound.

The market for crossbred colonial wool demands the serious attention of all our English readers. This wool is increasing in production and popularity, and so long as the latter condition prevails, there is every inducement to the grower to still further increase the production of his crossbred flocks, and the strongest inducement of all is that it pays. Here, again, the parochial instinct comes in, and we are often told by farmers, and even English wool dealers, that, of course, English is better. We can not too often repeat that, for the great majority of purposes, there is nothing better than colonial crossbred, speaking, of course, with regard to the Bradford stuff trade. Between one kind of good wool and another, the word "better" is inapplicable; the whole question is one of adaptability. No one would think of trying to make Jaeger garments out of Scotch black-faced or flannel out of Lincoln hogs. But when we come to consider a wool which is bred from English, which is brought to market in a more

useful state than English, and which is adaptable for the use of three-fourths of our trade, we must see that, from its enormous possibilities of production, it is becoming more and more an overpowering competitor. Let us look, then, at the typical quality which we have this year added to diagram 12. It will be seen that during a period of a year and a half the price of 40s crossbred tops has fluctuated between 14d. and 12½d. Loud as have been the complaints of the low price of English wool, there was probably no time during that period when 40s tops could be made out of English demiwool within 2d. per pound of the price of crossbred; or, to put it more plainly, during the whole period when 40s crossbred tops ruled at 12d., a 40s top out of Irish, Kent, and Leicester would have cost 15d.

AMERICANS TURN THEIR ATTENTION TO CROSSBREDS.

The long continuance of this state of things has induced consumers in increasing numbers to turn their attention to crossbred wool. This has been especially the case with several large American mills, which, in times past, took large quantities of English demiwools and which are now running entirely upon crossbreds for making the very same goods as before. Moreover, English demiwools have now an additional competitor for public favor in the shape of an increasing supply of crossbreds from the River Plate. Many of these so-called crossbreds are indeed pure-blood Lincolns, and present an appearance very similar to their English progenitors. The success of recent importations of this wool, most of which has come to Yorkshire, will give a fresh impetus to the production. It is not, therefore, surprising that in spite of the good year which Bradford has had in the manufacturing department, prices of English demiwools are only some 15 per cent higher than they were in January, while the prices of half-breds and downs are barely 10 per cent higher.

Our position with regard to the enormous imports of all kinds of wool into this country is distinctly better. For twelve years—from 1881 to 1892, inclusive—the quantity retained for home consumption was less than the exports; in the latter year, it was nearly 100,000,000 pounds less. For the last three years, however, the tide appears to have turned, and for the present year, although the import has been larger than ever, we have retained 30,000,000 pounds more than we have exported. The situation is also better as regards the colonial wools dealt with in the London market. We began the year with 63,000 bales held over, there has been an increase of the imports for the London sales of 122,000 bales, and we finish the year with only 20,000 bales held over.

The export of British wools to America for eleven months has been 12,935,500 pounds, the value of which is stated as £452,876. This calculates out to about 8½d. per pound, which would indicate that a large proportion of the export has been Scotch black-faced wool. At all events, the Bradford market has never been affected during the year by any considerable demand for America.

The article here quotes, from the Official Bulletin of the United States National Association of Wool Manufacturers, a table showing the number of sheep in the United States on April 1, 1895, to have been 39,949,388 and the total wool product 294,296,726 pounds. He adds that as the shrinkage of United States wools is very great (about 60 per cent), they can only be compared with the English growth by reducing both to the scoured state. Therefore, he finds that the total American product of scoured wool was 125,718,680 pounds, against 101,546,105 pounds of English scoured wool.

MOHAIR AND ALPACA.

The unprecedented rise in the price of mohair has been reported upon from the Bradford consulate. The Observer's review begins with the rise caused by the demand for bright fabrics and follows it through the various fluctuations. A diagram is given showing how Turkey (average) mohair

opened in 1895 at about 26 cents and ran up to 60 or 63 cents per pound and how Cape firsts ran from 25 cents to about 57 cents per pound. Of alpaca, it is added:

Alpaca, in a more modest way, has had almost as exciting a time of it as mohair. Starting at 14½d. per pound in January, the price ruled steady right through February and March. In April, business was done at 15½d. and 16d., and in May, when mohair became excited, the price jumped to 17d. and 17½d. This produced a slight check, however, and large transactions took place in June at from 16d. to 17½d., and then there was a rapid rise to 18¾d., 19½d., and even 20d., which latter price was paid for two lots which went to America. In July, not much was done, but 22½d. was paid for a small quantity. In August, there was renewed excitement in consequence of large transactions, and, starting from 22½d., the price rose quickly to 23d., 2s., 2s. 2d., and 2s. 3d., while in September, 2s. 4d. was realized for one lot. This was the extreme point touched. October and November were quiet months, and in the second week of this month the price had fallen to 22d. Since then, some 800 or 900 bales have been sold at 23d., and that price has been refused for a further lot, so that the closing quotation of the year may be put at 24d. Most of the demand has been due to the run on single yarns—from 28s to 44s—for linings, the braid trade having been very quiet throughout the year.

YARNS.

Of yarns, the expert on this branch states:

At length, the long-hoped-for change has come and the revival of trade is an accomplished fact. We have been so long within the shadow of bad trade that it is almost with incredulity that we try to realize the fact that the shadow has at length removed and a spell of commercial sunshine has set in. As to how long this will last, opinions differ—while the sanguine look forward to at least a year's duration, the pessimists limit our prosperity to a few months. And while, at the end of last year, we consoled ourselves with the remembrance that our continental competitors were in no better plight than ourselves, this year we may rejoice with them that rejoice, knowing that the returning tide of prosperity has reached them also.

There are, of course, some things which we could wish otherwise. For instance, it is an unpleasant fact that we are unable to compete with the French, German, or Belgian spinner in the production of cheap botany yarns in certain counts. But, at least, we may console ourselves with the reflection that our botany yarns are generally acknowledged, even abroad, to be better spun and better managed. Still, in the very important element of cheapness, we are undoubtedly put into the shade by our continental neighbors, and it behooves some of our leading spinners to give the matter earnest attention.

That it is not solely a question of foreign duties, is proved by the fact that French and Belgian botany yarns are sold in Germany under exactly the same duty charges as we must pay. Evidently, therefore, the foreign spinner can, or, at all events, does, produce a cheaper botany yarn than we can supply under existing conditions.

In the matter of cheviot and braid yarns, we are still to the fore; and, although there are a few foreign spinners of cheviots who are formidable as far as they go, happily they don't go far enough to cause us much concern. The same applies to mohair, still almost exclusively spun by ourselves, and which has had this year an enormous sale.

Of all the various improvements in demand and price that this year has witnessed, undoubtedly the improvement in the mohair trade stands first, and, treading close upon its heels, comes the luster trade. The advance in mohair yarns, from the lowest price in February to the highest in September, may be taken at about 85 per cent for the low qualities and about 75 per cent for the better ones. In a few cases, certain qualities have come within a fraction of doubling their prices within six or seven months. And even at the highest prices, manufacturers and merchants could not get all they wanted. For wesek together, spinners declined

to quote for one or other of their yarns, or, when pressed hard, only gave a prohibitive price although at the height of the rush it was difficult to say what was a prohibitive price. Now, at the end of the year, there is naturally some decline from these highest rates, and spinners are not so busy, but the demand is still too heavy to allow of any sudden drop, and while it is true that there are manufacturers anxious to sell mohair yarns bought over and above their requirements, it is also true that there are other manufacturers still needing those yarns.

ALPACA AND LUSTERS.

Along with the advance in mohair, has come a considerable advance in brown and gray alpaca. For some purposes, manufacturers can use the latter almost as well as the former, and when mohair rose to such extreme prices, this rise naturally brought a large demand for alpaca and English luster yarns, and a corresponding advance in the prices of these two materials followed. Alpaca tube yarns in single 30s to 40s for dress goods and linings were bought in big quantities, so that some spinners were practically unable to offer any for weeks together. All qualities of gray and brown alpaca grew dear—even the ordinary 2-28s rose from about 1s. 6d. to 2s. 6d.—but the white alpaca was comparatively neglected.

Coming from mohairs and alpacas to lusters, we have just the same report to make. Mohairs and alpacas, when they grow dear, are replaced by lusters for cheap makes of goods; hence the advance in lusters was easily foretold. This advance came, and continued to such a pitch that it threatened to rival the immense rise in mohairs. In August and September, the demand for any sorts of bright yarns—lusters or demis—was enormous. Spinners of fine counts were simply choked up with orders, and spinners whose specialty was the thick counts in spirals and crewels, for the mantle and heavy woolen trade, were in like condition. Such a time had not been seen for a generation. Instead of the spinner hunting hungrily about 'change for orders, it was the manufacturer and merchant who had to run after the spinner and implore him to accept orders and to deliver. It would, however, be a mistake to suppose that the spinners have one and all made immense profits. A good deal of that profit has undoubtedly found its way into the pockets of the wool growers and wool and top dealers, and in some cases spinners have done no better with the high prices than they did with the low ones.

Dealing now with coating yarns—cheviots and botanies—we find that a gradual change in the demand has taken place. The great rush on cheviot coating yarns is over, and the softer and duller botany yarns have taken their place, to the detriment of our foreign trade. Of course, there will always be a certain quantity of English-spun crossbreds selling abroad, but it is possible that we may have to wait some time before we see such another demand as there was last year. On the other hand, spinners of botany yarns have been fully occupied to meet the demands of the home manufacturers. The immense demand for America and the improvement in the home trade have caused prices to rise considerably, and while as low as 2s. 1d. was accepted for 2-60s botany warps at the beginning of the year, the price rose by August to 2s. 9d. for the very same yarn. Now, at the end of the year, there is naturally a falling off, as is always to be expected, but spinners have plenty of orders on hand and are not anxious to sell.

In the home trade, botany yarns have indeed proved no exception to the general rule. Not since the outbreak of the Franco-Prussian war has there been such a rapid advance or so sharp a decline in prices. Up to July, the improvement was comparatively slow, but steady, and was the result of the legitimate requirements of the trade. Then came the excitement of the London sales and the quite uncalled-for and unwarranted rush of prices from 6s. to 7s. for 60s botany in September. But though values went up like a rocket, they came down like the stick, until the year closes with 6s. as the nominal price. These sensational movements in trade always have to be paid for in some form or other, and we may congratulate ourselves that we have so soon found a healthier level. Business in the coating trade was paralyzed by the rise, and it is only now beginning to show signs of renewed vitality. We began the year with the lowest prices ever reached—4s. 10½d. to 5s. per gross for ordinary

60s and 3d. per gross more for supers. Although, for a time, it seemed as if "the bottom had been knocked out," the increased consumption due to the improvement in the American trade soon began to be felt, confidence was restored, and a more hopeful feeling as regards prices began to be entertained. Still, for the first two months of the year, it was a struggle to maintain prices, and in March it was still doubtful whether the course of values would be upwards. The arrival of a few American buyers and the steady monthly growth of the exports of goods, however, gave a new spirit to the market. The aforesaid Americans did not operate very largely, it is true, but their action forced the hand of the home trade and compelled them to replenish stocks. Since then, the trade has never actually looked back. The excitement which followed was, as has been indicated, more or less speculative in character and was "without knowledge." As the excitement grew more intense, the wiseacres who had practically bought nothing at the lower prices, proclaiming their disapproval of, and disbelief in, the advanced prices being paid, abandoned their attitude of *sang-froid*, and, in terror lest they should be "left," rushed in and bought regardless of price, thus giving to values a further and altogether unwarranted filip. For a time, the trade barometer moved up so quickly that it was impossible to tell what prices were from one market day to another, and at this juncture it seemed impossible for a man to do the right thing in business. However, from the stage of fever heat we were soon released by the reaction, and although sudden and unexpected was the time of its arrival, yet it gradually allowed us to cool down to a more normal state, in which one could breathe more freely and operate with confidence as regards either buying or selling.

Regarding the other sorts of yarns—cashmeres, icelands, camel hairs, fancy yarns, and knittings—the report is satisfactory. There is an advance in prices all round, which may be taken approximately at 10 per cent, and spinners have been well employed.

PIECE GOODS.

It is in piece goods—that is, the completely manufactured article, viz, worsted coatings, dress goods, linings, etc., in complete bolts or pieces of from 40 to 70 yards each, all ready for the importer—that the reviewer writes in the most hopeful strain, as appended:

Never in the history of the Bradford trade has there been such an *annus mirabilis* as the year which closes to-morrow. It opened apparently without any distinct signs that it would be more than an average year. Commission weavers were not fully employed and rates were very low. Prices of everyday cloths were still drooping, and the general trade of the country, especially the important branch of agriculture, was still depressed. Indeed, in the home trade, the first two or three months were distinctly bad, and there was a drop in prices in February which many men found it hard to bear. But just as plants of slow growth will, in the spring, make steady progress beneath the soil for a long time before they give any visible signs of life, so there were already forces at work which were bound to make for a great improvement ere long. In the months of November and December of the previous year, large orders for worsted coatings and linings had been placed by American buyers. This removed from the area of competition for the dress trade many hundred broad and heavy looms, and at the same time gave the botany spinners a turn of activity to which they had long been unaccustomed. Then—although most people adopted a cynically incredulous attitude on the subject—it was certain that those firms who still made a specialty of bright dress goods were busier than they had been for many years. Hence, notwithstanding the partial failure of the spring trade, manufacturers began to find it much easier to obtain orders, empty looms became more rare, and before the summer months had arrived a scarcity of weavers was experienced.

This latter phenomenon greatly impressed the trade as a whole. Not for years had such a thing happened as that a loom should stand idle with a warp in it for the want of somebody to attend it. And yet, it would be easy to overrate the import of this fact; for weavers are

not exactly like joiners or masons—once a weaver is, happily, not to be always a weaver. When a girl leaves the spinning frame to learn to weave, it is seldom with the idea of spending the rest of her life in the clatter of the shed. After a few years of it, most of them get married, and although a proportion return to the loom either as the chief breadwinner or by choice, yet the great army of weavers requires to be constantly and largely recruited from below if its numbers are to be maintained. Now, in slack times, such as we have had for a good many years, employment at the loom is more or less precarious, and even though the rate of wages may not be reduced, the earnings of a weaver over several months, and even years, may be small. And, of course, it is the best and most experienced hands who at such a time command the most regular work. Thus weaving ceased to be such an overpowering attraction, and the high wages and the certain measure of secured comfort offered by domestic service proved a temptation sufficient to reconcile many a young woman to its restrictions and drudgery. Now, all that is changed; hundreds of households have been stranded because their maids-of-all-work have thrown away the cap and print dress to don the weaver's harden skirt once more. It would, therefore, be a mistake to suppose that the want of weavers was due to an increase in the number of looms engaged in the trade. In all probability—although, unfortunately, there are no statistics to which we can appeal—there had been going on a steady diminution in the number of looms in the trade, and manufacturing was, up to 1895, a shrinking industry. Before next year is out, there will be large additions to manufacturing plants, but the supply of weavers is likely to be adequate to all our needs; and it may even be that, with a lull in the trade, manufacturers may be tempted to reduce wages.

This, however, is a digression. The spring saw a distinct revival both in the home and the shipping trades and prices took an upward turn. Ever since then, there has been an abundance of work for everybody, and although it was not possible to obtain the advances in goods that were made in yarns and tops, it has been much easier to obtain remunerative rates than for years past, while commission rates have become highly profitable, and looms on commission were often not to be had at all.

THE DRESS-GOODS TRADE RETURNS TO BRADFORD.

In the dress trade, the year has been remarkable for the run on *crépons* and *glacés*. The *crépon* was a new departure, but it "caught on," and the enterprise with which it was taken up by our manufacturers is full of hope and inspiration for the future. Almost from the beginning of the year these fabrics had a good run, and if more could have been made more would have been sold. Most of these goods were made with mohair, and the better the quality the better they have sold. The inevitable attempt was indeed made to imitate them in low qualities of wool *crépons*, but these vile things had all the vices without any of the redeeming qualities of the better-made article, and they proved to be a complete failure. It is doubtful whether to-day half a dozen pieces of these dowdy goods could be found on the shelves of any of our home-trade houses. The true *crépon* of mohair or silk and mohair is a dressy thing, which will not crease or cockle, and, for what it is, is fairly durable. Heavier makes were largely taken for autumn wear, and they were good to sell right away to August. Then, soon after the vogue had fairly set in, *glacés*, *sicilians*, and other makes of bright goods began to be sought up. Paris and New York buyers operated heavily in all these goods, and almost cleared out stocks in merchants' hands. Then, the London houses awoke to the consciousness that there was a real fashion in bright things, and their buyers came down, only to find the cupboard bare. Merchants bought back from Manchester houses at a handsome profit goods which they had sold six months before, and sold them again at higher prices. The demand extended to figured goods, and even low orleans of the old type—indeed, anything that was bright would sell "like hot cakes." One London buyer, representing a large house, is credibly stated to have spent four days a week in Bradford from Easter to bank holiday. Men would eagerly snap up odd pieces which had been returned as short or damaged, and price was no difficulty. Although the run has been mainly upon mohairs, English lusters have participated extensively in the demand and have advanced considerably in price, as the

following examples of two cloths in a range of narrow pure lusters will serve to show: Price per yard in April, 8¼d.; in December, 11¾d.; price per yard in April, 3¾d.; in December, 5¼d. Such tremendous jumps as these could, of course, only arise from a sudden demand meeting with an inadequate supply, and although we may have a larger trade in bright goods next year than this—though this is not by any means assured—prices are scarcely likely to advance much higher, even if they can be maintained.

Turning to more sober topics, the serge trade has been fairly good. Estamenes, in the first part of the year, were somewhat neglected, a preference being shown for a brighter finish, but during the last three months they have again met with a good demand and makers are already weeks behind with their deliveries. The clean-finished coating twills, which held sway for some months, though smart and dressy when new, do not stand the weather like the estamene. Tweeds had a fair start early in the year, but have dropped very flat. Soleils, on the other hand, have met with a good, steady demand.

In high-class fancy goods for next year, some very lovely effects are being obtained in mohairs. Sicilians in tartan colors of splendid make, crêpons at from 3s. 6d. a yard upwards, black mops on colored grounds, etc., are being produced with every promise of success. Delaines are still wanted, and some lovely things in plains, silk stripe, and silk warps, in a wide variety of colorings, have been got ready for next spring. Both design and coloring show originality of idea and improvement of taste. So long as the blouse holds its position, there will be a market for delaines, and next summer's patterns are sure to find favor. In low dress goods, printed ecartes have met with a great deal of favor. The fashion for big sleeves has produced a brisk business in 27-inch moreens, and the few makers in the trade have been kept busy all the year through. Another branch of trade which is of growing importance and capable of considerable development is the manufacture of fancy linings and sleeve linings in cotton and silk and worsted and silk with cotton warps. There is wide scope for taste in producing novelty of design and color in these goods. In waterproofings, there has been a steady, but small, trade in paramattas, although the rise in the price of botany wools has checked business. For durability, there is nothing to equal them, but wear is now a secondary consideration, and style is everything. The heavier tweeds have been largely superseded by fine cotton twills, in which our manufacturers are able to beat the Lancashire weavers. Checks have quite gone out, and these goods are now finished in mixtures and small, neat designs.

THE AMERICAN TRADE.

In dealing with the American trade, it would be easy to adopt an American style and write in a strain of exultation. The year has, no doubt, been a record one, and the great expansion of the trade has no doubt contributed largely to the general improvement in other branches. But it would be foolish in the extreme not to remember that circumstances have contributed in a remarkable manner to produce a result which can only be wisely regarded as exceptional. The commercial depression in the United States was already passing away in the summer of 1894, but, of course, the probability of the Wilson Tariff becoming law kept back every order which could be delayed. Thus, when the year opened, the warehouses of the New York merchants and the shelves of the jobbers and storekeepers from the Atlantic to the Pacific were empty. Then, the reduction of the duties—though the accompanying removal of the duty on wool was a compensation to the American manufacturer—had the immediate effect of substantially reducing the price to the consumer, who at the same moment found himself with money to spend—a new experience for him. Finally, prices here were absolutely the lowest ever known. What wonder, then, that the Americans bought largely. Orders without precedent for magnitude were placed with manufacturers who for years had had but little to do; and the monthly returns issued from the United States consulate in Bradford show what can be done when all the conditions are favorable.

CLAUDE MEEKER,

BRADFORD, January 1, 1896.

Consul.

GERMAN TRADE IN THE TRANSVAAL.

The great interest just now manifested in Germany in the Government of the South African Republic, otherwise known as the Transvaal, can be traced to the rapidly increasing export trade which Germany has built up within the past few years, as well as the growing German population in the Republic.

When Germany refused, years ago, to enter into more intimate relations with the Transvaal, thus leaving England an open field, she did so because, at that time, her interests in South African affairs were insignificant. Owing to the acquirement by Germany of colonies in East Africa, her interests have now become important, and there can be no doubt but that she looks to Africa as her most promising field for extending foreign trade and that great efforts are being made in this direction.

German interests in the Transvaal are large and constantly increasing. A large proportion of the Transvaal gold-mine shares are in German hands and the Delagoa Railway, connecting the capital (Pretoria) with the east coast, was built chiefly with German capital.

Germany looks mainly to its iron industry for the development of its trade with the Transvaal and as its most promising factor in lessening English influence there. It is known that the most important firms engaged in the iron industry in Germany, such as Krupp, the world-renowned firm of Essen, and Siemens & Halske, of Berlin, have created branch establishments in the Transvaal. Other industries have not been slow to enlarge their business with the Transvaal.

In 1889, the German exports to the Transvaal did not amount to 1,000,000 marks (\$238,000); in 1894, they reached nearly 6,000,000 marks (\$1,428,000), in which goods shipped via England are not comprised. The principal items of export were: Drugs and chemicals (nearly all cyankalium), 2,929,000 marks (\$697,102); iron and manufactures of iron (rails, sleepers, bridges, etc.), 1,068,000 marks (\$254,184); steam engines, locomotives, and railway cars, 1,082,000 marks (\$257,516).

The imports into Germany from the Transvaal are still insignificant, amounting in 1894 to but 500,000 marks (\$119,000), of which lead and copper mineral alone amounted to 464,000 marks (\$109,932).

The exports from Germany to the Transvaal, which amounted in 1889 to one-half of its exports to Cape Colony, reached in 1894 about the same figure as those to the latter country.

There is no doubt that Germany is becoming a formidable competitor in these markets, which still depend largely on Europe and the United States to supply their wants.

Our late consul at Cape Town, Mr. Benedict, repeatedly called attention to the opportunities offered to develop our trade with South Africa; it is to-day, perhaps, the most promising field in existence for extending our export trade.

A country possessing the enormous wealth which the Transvaal has re-

vealed to the world must become a large buyer from the great exporting nations and continue so many years. It is at this stage of its development that we should endeavor to establish our trade relations with it on a firm basis.

The Transvaal's gold exports have increased rapidly. In 1889, the value of gold exported was \$1,082,900; in 1891, it was \$12,804,000; in 1892, \$22,562,000; and in 1894, it reached \$25,608,400.

That Germany has recognized the commercial importance of these new countries is evidenced by her activity in establishing branch houses and the vigorous way in which the Germans have pushed their commercial enterprises in South Africa, and in the Transvaal especially.

THOS. EWING MOORE,

Commercial Agent.

WEIMAR, *January 8, 1896.*

GERMAN INTERESTS IN THE TRANSVAAL.

Under date of February 19, Consul Stephan, of Annaberg, transmits the following translation of an article entitled "German interests in the Transvaal," from the *National Zeitung*:

The interests of Germany in the Transvaal are far greater than one would suppose from the number of Germans living in that country, although, as a matter of fact, this is by no means small. Certainly, it does not reach that of the English, but the importance of the German element compensates for its numerical inferiority. If one considers that Johannesburg has grown to its present size within the last ten years, and that the town has received an influx of tens of thousands of unmarried English adventurers from the neighboring Cape Colony, it is of great importance that the Republic already numbers about 3,000 German settlers. These have not come merely as migratory birds, to leave the country again with a light heart, nor do they go in great numbers to the mines as ordinary laborers. The great majority settle in the country, marry, and make homes there, many of them taking foremost places among the skilled artisans. Among these Germans, we do not include those who, in consequence of their long residence in South Africa and their business and personal relations with the English, are indifferent in political matters.

In industrial enterprises, especially, the Germans are in the front rank. Eduard Lippert, of Hamburg, who has lived in the Transvaal since 1886, has established large factories there, among them factories of cement and dynamite, which are indispensable in the district. A forest plantation made by him is of the greatest importance. The largest electric works in the country, with 4,000 horsepower, have been erected by him in connection with Siemens & Halske.

Representatives of German financial interests take a prominent position. The Delagoa Bay Railway was built chiefly with German and Dutch capital. It was chiefly by means of German money that the very extensive metallurgic institute was founded. The silver and gold mining works, which are indispensable for South Africa, were erected by German capitalists from Frankfort. German houses have the largest and handsomest stores in the main street of Johannesburg. At the commencement of the late troubles, one of these firms appealed to our (the German) Foreign Office for protection against the English, stating that it alone had imported from Germany during the last year goods amounting to 5,000,000 marks (\$1,250,000).

A recent calculation has shown that more than 50,000,000 marks (\$11,400,000) of German capital are invested in the mines, mostly in those which were not involved in the reckless proceeding of last year. These are under the technical and financial direction of Germans,

such as Mr. A. Wagner, of southern Germany. The most esteemed physicians in Johannesburg are Germans; artisans of all kinds, engineers, and such laborers as are most in demand are Germans. They form a number of societies, among which the Liedertafel, in Johannesburg, and the German Club include the most prominent members of the colony.

GERMAN TRADE WITH SOUTH AFRICA.

The wish to see the South African countries connected with Germany by regular steamship lines has frequently been expressed, but has greatly increased since the recent political occurrences there. The trade with the Transvaal passes more and more via Delagoa Bay, while German goods destined for other countries of South Africa go almost exclusively by way of Cape Town. Thus the trade returns of Cape Colony form the most reliable basis for an estimate of German trade with South Africa.

The imports and exports of Cape Colony fluctuated greatly in the eighties. In 1880, the imports amounted to \$37,287,467, in 1882 they rose to \$45,604,244, falling to \$18,389,884 in 1886, and rising again to \$45,577,126 in 1890. Later figures are as follows:

Year.	Imports.	Exports.
1891.....	\$41,763,788	\$53,209,583
1892.....	46,575,746	57,294,989
1893.....	56,153,576	62,118,236
1894.....	56,387,675	65,705,666
1895.....	92,915,686	82,258,522

Only three ports—Cape Town, Port Elizabeth, and East London—have an important foreign trade; that of other ports is so inconsiderable that, as far as European trade is concerned, it is of no account. These export figures do not represent the exports of Cape Colony alone, but include all goods introduced from the neighboring territories for export from Cape ports; and the import figures include all goods without distinction, whether duty has been paid or whether the goods went in bond. The value of the goods which actually remained in Cape Colony amounted to only \$35,838,440 in 1893 and to \$33,968,446 in 1894. The total imports of Cape Colony from the chief sources were as follows:

Countries.	1892.	1893.	1894.
Great Britain.....	\$37,425,354	\$44,783,340	\$43,198,557
British colonies.....	4,784,625	3,248,200	2,947,209
Other countries.....	5,414,733	7,269,750	8,833,439

Thus, while the importation from non-British possessions has constantly increased, the greater part of this falls to the United States and Germany. The imports of the latter country, according to English statistics, into Cape Colony in 1894 amounted to \$2,181,972, against \$793,372 in 1892. It must be mentioned, however, that these figures do not represent the actual

trade in question, as many German goods which go to Cape Colony via England are frequently registered as English. Thus the actual trade of Germany amounted to :

Imports into and exports from Germany from and to Cape Colony.

Year.	Imports.	Exports.
1890.....	\$4,253,060	\$1,285,200
1891.....	4,117,880	1,263,780
1892.....	3,748,500	1,742,160
1893.....	4,041,240	2,499,000
1894.....	3,291,540	2,801,260

While, therefore, the importations from Cape Colony decreased, the exportations thither increased. The imports of Germany from Cape Colony consist principally of sheep's wool; it amounted in 1894 to 8,820,900 kilograms, valued at \$3,107,090. The minor articles consist of dried flowers, coarse fancy feathers, oxhides, wine, precious stones, and aloes. Among the exports from Germany to the Cape, the most important are explosives, to the amount of \$817,768. Other important articles are:

Articles.	Amount.	Articles.	Amount.
Ironware.....	\$572,628	Copper goods.....	\$80,206
Instruments, machines, etc.....	281,554	Hardware.....	40,460
Cottons.....	151,606	Leather goods.....	74,494
Woolens.....	33,796	Beer in bottles.....	39,746
Clothes and underlinen.....	41,650	Sugar, etc.....	37,366
Glass goods.....	37,128	Paper ware and cardboard goods.....	41,174
Wood and carved work.....	103,292	Soap and perfumery.....	26,180

Wall papers are quoted at two prices, either free on board at London or free at Cape Town. An idea of the sale of this article may be obtained from the following statistics of the last five years: In 1890, 10,000 pounds; 1891, 9,448 pounds; 1892, 12,861 pounds; 1893, 16,962 pounds; 1894, 16,480 pounds. According to the official statistics, the only exporters are England and Germany, the latter to the amount of about \$2,000. At present, wall papers are in great demand, and new and elegant patterns offered at a low price would easily find buyers. The length of the wall papers is of great importance, as those under 36 feet in length can hardly be sold. English wall paper 21 inches wide has the preference over other European and over American, which are only 18½ inches wide; yet the latter are beginning to be imported.

THEODORE M. STEPHAN,

ANNABERG, *February 19, 1896.*

Consul.

NOTE.—Under date of February 5, 1896, Consul Hammond, of Budapest, reports the arrival at the port of Fiume of a large quantity of wheat flour for shipment to Cape Town and other South African ports, and notes this as the first important shipment to South Africa from the port of Fiume.

SANTO DOMINGO: AGRICULTURE, COMMERCE, ETC.

In answer to a request for certain information in regard to commerce, agriculture, etc., of the island of Santo Domingo, I beg to report as follows:

The principal articles of export from this part of the island, in their order of value, are tobacco, coffee, cocoa, sugar, mahogany, logwood, hides, and goatskins. Tobacco and mahogany go to Europe, as also the greater quantity of coffee and cocoa. Sugar, logwood, hides, and goatskins go to the United States.

The Government is assisting the development of trade by all the means in its power. It has given a concession to the San Domingo Improvement Company (a New York corporation) to build a railroad to connect this city (Puerto Plata) with the interior towns of Santiago and Mora, and the road will probably be completed before 1897. It has also given a concession to build an iron cylinder wharf in this port, at which the above railroad will terminate, and work on this is well advanced. It is also trying to encourage agriculture, especially the planting of coffee and cocoa, as tobacco has given very bad results for a number of years past.

I believe property is as secure here as in any part of the world. Foreign capital and machinery are gladly welcomed by the people.

Immigrants are also welcome, and the Government is assisting pecuniarily the large number now arriving by every steamer from our neighbor—Cuba.

There are no direct taxes, unless licenses to merchants and shopkeepers are so considered. The revenue of the Government is derived from taxes on imports and exports.

Puerto Plata proper contains about 4,500 inhabitants, and its facilities as a port of export are ample. Some twelve or fifteen steamships per month touch here. They are of the following lines: Hamburg-American Packet Company (France and Germany), Clyde Line (New York), Compagnie Générale Transatlantique (France), and Herrera Line (Spanish)—Cuba and Puerto Rico.

In regard to land titles, much of the land in the interior is held in fee; another portion is held in common (community), in which parties buy a certain right—say \$50 or \$100—and are entitled to cultivate all the land they please within certain limits. A small ground rent is collected by the different town councils for the latter. It is very rarely that one hears of disputed titles.

The climate is good and very healthful. The thermometer rarely goes above 90° F.

THOS. SIMPSON,
Consul.

PUERTO PLATA, *January 31, 1896.*

CHILEAN RECIPROCITY AND PERUVIAN TRADE.

The treaty of amity and reciprocity recently consummated between Chile and Bolivia and the proposed similar treaty between the first-named country and Brazil have created widespread concern in Peru.

The subject has been extensively discussed by leading journals of Lima, notably the *Comercio* and the *Opinion Nacional*. These journals agree in the opinion that the treaties referred to will affect injuriously the commercial interests of Peru by bringing the sugars, coffees, and other products of Brazil into the Chilean markets on the basis of reciprocity, practically excluding the like products from Peru.

Some of the Chilean papers, however, are already advocating a similar treaty with Peru, and it is not improbable that the public sentiment in Peru, which has so strongly at heart the redemption of Tacna and Arica, will influence the consummation of such a treaty, whereby the Peruvian markets would be more effectually closed than now to the breadstuffs and other products from the United States.

Since the treaty of Ancon, Chilean wheat and other products have, practically, enjoyed the monopoly of the Peruvian markets, but the *Comercio* and the *Opinion Nacional* argue that if reciprocity with Chile can not be obtained, then negotiations should be opened with the United States to secure it there and to establish the steamship lines with the latter country required for its execution.

Chile would, perhaps, find greater difficulty to consummate reciprocity treaties with both Brazil and Peru were due weight given to the disproportion between the 20,000,000 of people in those two countries and the 3,000,000 in Chile, since it would be manifestly impossible for the latter to consume more than a proportionate quantity of the tropical products raised by Brazil and Peru, whereas the latter countries could easily consume all the wheat and other products raised by Chile.

On the other hand, Peru would find in the United States a population of 70,000,000, whose accretions every five years exceed the actual total population of Chile. This great and growing population spend abroad annually \$100,000,000 for coffee and a like sum for sugar. It is obvious, therefore, that Peru and other tropical countries of America would find a readier and broader market in the United States than in Chile. It may be assumed, also, that the United States will prefer to buy in countries where its products will enjoy equal competition, at least, with those of other nations.

Peru will rapidly augment the quantities of its products and its commerce in general when its railways are extended to the Amazon and to other parts of its wondrously fertile territory. It is to be hoped that the Peruvian Corporation, a company chiefly composed of English capitalists, which has been accorded the control of the principal railway lines now in existence for a

period of more than sixty years, will soon see its interests in the extensions referred to and in the consequent colonization of the vast tracts of land it holds under its contract.

It is greatly to be regretted that American capitalists do not seem to have discovered the advisability of establishing the proper means of communication with the west coast of South America, as it is clear that without such means, no agreements that our Government might make looking to the extension of our commerce in these parts could be successfully carried out.

LEON JASTREMSKI,

Consul.

CALLAO, *January 30, 1896.*

TOBACCO DUTIES IN PERU.

I have the honor to transmit herewith, for the information of the Department of State, a supreme decree issued by President Piérola, January 25, 1896, in regard to the duties on tobacco, etc., entering the territory of Peru.

J. A. MCKENZIE,

Minister.

LIMA, *February 1, 1896.*

[Translation.]

TOBACCO DUTY.

ARTICLE 1. The import duties on all classes of tobaccos, cigars, and cigarettes entering the territory of the Republic from abroad shall be specific, and, from the time fixed by article 3, shall be collected at all the custom-houses according to the following tariff:

Tobacco from the bordering countries, whether in the leaf or entire, in the leaf in rolls, or entire in rolls.....	per kilogram*....	\$0.25
Mexican and Central and South American tobacco, whether in leaf or entire, in the leaf in rolls, or entire in rolls.....	per kilogram*....	.50
Tobacco from any other foreign source, whether in the leaf or entire, in the leaf in rolls, or entire in rolls.....	per kilogram*....	1.00
Tobacco for chewing, snuff, cut and fibered tobacco, and manufactured tobacco in general, in whatever shape or form, excepting those of cigars and cigarettes, from whatever source imported, including the bordering countries.....	per kilogram*....	1.00
Italian cigars.....	do.....	4.00
Cigars from any other source.....	do.....	7.00

ART. 2. A consumption duty will be collected on every class of tobacco, cigars, and cigarettes in accordance with the following scale:

(1) Native tobacco in the leaf entire, in the leaf in rolls, or entire in rolls, per kilogram*.....	\$0.25
(2) Mexican and Central American tobacco.....	per kilogram*.... .40
(3) Tobacco from the bordering countries, whether in the leaf entire, in the leaf in rolls, or entire in rolls.....	per kilogram*.... .35

* Net weight.

(4) Foreign tobacco, from whatever source, in the leaf entire, in the leaf in rolls, or entire in rolls.....	per kilogram*... \$0.60
(5) Foreign tobacco for chewing and snuff.....	do..... 1.50
(6) Foreign cut and fibered tobacco, made up in packets ready for consumption without any further preparation.....	per kilogram*... 1.50
(7) Foreign cut and fibered tobacco, loose, intended for further elaboration in the country.....	per kilogram*... .70
(8) Imported foreign cigars in boxes or loose, from whatever source.....	do..... 2.00
(9) Cigars made in the country, no matter of what tobacco, in boxes or loose, per kilogram*.....	1.50
(10) Foreign cigarettes, from whatever source, made up in packets, bundles, or loose, per packet or bundle not exceeding twenty-four cigarettes each and for every twenty-four cigarettes loose.....	.06
(11) Homemade cigarettes of foreign tobacco, from whatever source, except the bordering countries, per packet or bundle not exceeding twenty-four cigarettes...	.05
(12) Homemade cigarettes of native tobacco simply or mixed with Mexican or Central or South American tobacco, per packet or bundle not containing over twelve cigarettes.....	.01½
Ditto, per packet or bundle containing over twelve, but not exceeding twenty-four, cigarettes.....	.03
(13) Cut or fibered native tobacco, put up in packets ready for use without further preparation, for every 50 grams or fraction less than 50 grams.....	.03

ART. 3. As soon as the Government has taken charge of the collecting of these duties, the existing stock of tobacco, cigars, and cigarettes shall pay the increase in the consumption duty arising from the preceding article. Differences resulting in a decrease will not be returned (reimbursed).

ART. 4. The consumption duty on raw tobacco, as fixed for native tobacco, viz, 25 cents per kilogram, net weight, will be returned intact to exporters of tobacco made up in the country into cigars and cigarettes and on snuff, cut, and fibered tobacco prepared in the country, after proof has been given of the contents of the packages and of their importation into a foreign country. This return will not be made on machine-made articles.

ART. 5. The Government will issue a set of rules and regulations for the better enforcement of this law, granting to producers, importers, manufacturers, merchants, and dealers the greatest possible facilities for the dispatch and transit of the taxed tobaccos, cigars, and cigarettes as are compatible with the security of the revenue, so that the supervision exercised will not obstruct business.

ART. 6. The law of the 4th of November, 1886, and that of the 18th of November, 1892, as also all such other laws as are opposed to the present one, are hereby abolished.

AMENDMENT TO PATENT LAW OF PERU.

I have the honor to inclose herewith, with translation, a copy of an amendment to the Peruvian patent law, passed by the Peruvian Congress on the 3d of the present month, and which is in force from the 10th of January, 1896, the date of its publication.

J. A. MCKENZIE,
Minister.

LIMA, January 11, 1896.

* Net weight.

[Translation.]

AMENDMENT TO THE PERUVIAN PATENT LAW.

ARTICLE 1. Persons or firms desirous of obtaining a patent, be they inventors or importers of inventions, must file their applications directly at the Government offices. The Secretary of the Treasury and of Commerce will take charge of the application and issue the letters patent.

ART. 2. The application must have the following parts: (1) A description, in duplicate, of the invention or fact on which the invention is based; (2) the plans, samples, or drawings, in duplicate, which may be necessary to illustrate the invention; (3) a memorandum or the objects or papers submitted with the application; (4) the clear and precise specification of the claim, stating its features and the uses of the invention; (5) the term, within ten years allowed as maximum by the law, for which the patent is demanded.

ART. 3. As the Government does not guaranty either the novelty or usefulness of the invention, the security required by article 7, section 6, of the patent law in force will no longer be obligatory.

ART. 4. The application shall be referred to the industrial bureau, where, immediately and with the date of the application or certificate at filing, will be given to the applicant, if he demands it, an official notice stating the name of the inventor and the nature of the invention, which shall be published at his expense during thirty days. Having complied with this requisite, the application shall be referred to two examiners duly appointed. Should their opinion be contrary to the claim, notice will be given the applicant, and when he may have submitted his reasons for upholding his claim, a third examiner shall be associated to those already appointed, and their final opinion referred to the industrial bureau and to the Attorney-General, after which the Secretary of the Treasury will give his decision.

ART. 5. In the decree granting the patent, the issue of letters patent will be ordered, and the applicant must pay into the Treasury at once the sum of 50 soles for the Government fees, and unless this requisite be complied with the letters patent will not be issued.

ART. 6. The term of the patent will be reckoned from the date of the letters patent, and these will be extended to all parts of the Republic.

ART. 7. The law of January 28, 1869, is hereby amended in accordance with these present enactments, and the decree of February 26 of the same year is hereby repealed. The models to which it refers will be kept in future in the industrial bureau.

ART. 8. The applications pending, at the time of the publication of this law, at the prefect's office or before the provincial corporation shall be immediately referred, whatever stage or progress they may be in, to the Minister of Finance, who will attend to the further prosecution of the claims according to this law, omitting the publication of the official notice.

The Executive will take all necessary measures for enforcing this law.

INSURANCE COMPANIES IN PERU.

Minister McKenzie writes to the Department from Lima, under date of December 31, 1895, transmitting a copy of a decree of the President, dated December 21, 1895, in relation to insurance companies in Peru. Mr. McKenzie states that under the operations of this decree a number of foreign insurance companies will no longer transact business in Peru.

In article 1, the decree provides that the establishing of life, fire, and marine insurance companies or of their agents, branch establishments, or offices will not be permitted in Peru unless they previously enter their part-

nership or company agreements in the register designated by article 18 of the commercial code, making mention of all the points required by article 234 of the same code.

ART. 2. Powers of attorney given in legal form by companies established abroad to agents or persons appointed by them as their representatives in this country, empowering the latter without restriction to arrange judicially or extrajudicially such questions as may arise, must be entered at the same time in the same register.

ART. 3. Insurance companies or their agents and representatives shall declare in the same entry the effective capital assigned for their operations in the Republic.

ART. 4. The smallest effective capital for the establishing of an insurance company, branch, or agent's office that, in accordance with the foregoing article, may be declared is 100,000 soles (silver).

ART. 5. National insurance companies or the branches, offices, or agencies of such companies as are established abroad shall invest 30 per cent of the effective capital set apart for their operations in Peru in immovable property situated within the limits of the Republic, duly entered in the immovable-property registry, or in title deeds, or in public-credit bonds, municipal bonds, or in shares of private or public companies, or in gold, or in national coin, at the election of the managers or agents of the respective companies. Investments made in the form of title deeds, bonds, shares, or specie must be deposited in the banks of this capital.

ART. 6. Insurance companies shall have free liberty to dispose of the rents yielded by their immovable property, as also of the dividends or interest produced by their deposited shares or cash investments.

ART. 7. A period of six months (which will not be extended) is granted to insurance companies now established in the country to comply with the obligations hereby imposed.

ART. 8. The policies granted by insurance companies comprehended by this law shall be printed in the Spanish language, and it shall be clearly expressed in the said policies that the issuing company accepts the national jurisdiction in all questions arising between it and the holder.

ART. 9. The Government will appoint one of the superior officers of the Finance Department to see that the companies, branches, and agents fulfill their registry obligations as stipulated in article 1, as also that the guaranties and prescriptions enacted by the present law be effective and sound, and will close up such companies, branches, or agencies as fail to comply with the same, and will further exact the publication of each company's balance sheet at least once in every six months.

ART. 10. In case any insurance company, branch, or agency decides to wind up its business in Peru, it will have to apply to the judge of the first instance at the place where it is established. The said judge will order the petition to be published for fifteen days in two of the most extensively circulated newspapers published at the same place, and will at the same time

notify the Ministry of Finance, to the end that the latter give advice of the same to the prefect of the respective department; with a view to the matter being made known to the public. If, at the expiration of ninety days after the publication of the advices in the newspapers, no opposition be made on account of responsibilities existing for which the company is liable, the judge, after consulting the attorney of state, will grant the petition. Should there be opposition, the judge will fix a peremptory term of fifteen days to ascertain if the same be well founded, and, after consulting the attorney of state, will decide the case at once in accordance with justice. Either side may appeal against the judge's decision.

VENEZUELAN TRADE CONDITIONS.

I have the honor to report upon the commercial conditions of this consular district during the past year, and beg to refer to the movement in the chief articles of exportation.

COFFEE.

A gratifying increase in the exportation of this staple may be noted, the invoice value of the quantity shipped to the United States during 1895 being \$7,806,195.33 (United States gold), as against \$5,619,008.78 in 1894.

The removal of the retaliatory duties imposed by our Government upon Venezuelan products, on account of the nonacceptance by this Republic of our reciprocity propositions, had an immediate effect in restoring our trade, approximately at least, to its former dimensions. In the year 1893, there was shipped to the United States from this port only about \$4,500,000 worth of coffee, and of this reduced quantity less than one-half was entered for consumption at New York, the remainder going to Europe or Canada. The past year, however, makes an excellent showing, greater, indeed, than the average of the most favorable former periods.

CACAO.

A slight increase is noticed in the exportation of cacao, but its cultivation is by no means what it should be. The invoice value of the quantity shipped to the United States during the past twelve months was \$5,500.66. With the settlement of the district of Perija and the opening to traffic of the railway under construction, it is to be hoped that this most profitable product may receive the attention which it merits.

COPAIBA.

A great falling off is noted in the shipments of balsam of copaiba, although it is abundant in the forests of this section. The invoice value of the quantity exported during 1895 was only \$1,835.49, as compared with \$4,087.34 in the year previous.

FISH SOUNDS.

The Curbina fisheries have not done as well as usual, the sounds exported representing a value of \$7,405.74, as against \$9,848.89 in 1894.

HIDES AND SKINS.

The exports of hides have largely increased, while those of skins have suffered a perceptible diminution. Of the former, there were shipped in 1895, a value of \$28,212.93, and in 1894, \$18,314.28; of the latter, \$18,209.06 and \$22,245.54 for 1895 and 1894, respectively.

WOODS AND DIVI-DIVI.

The greater part of these exports go direct to Europe in sailing vessels, which arrive with merchandise from continental ports, but the United States receives more or less yearly. During 1895, there was shipped to New York a value of \$5,065.67 of boxwood and \$4,220.14 of divi-divi, differing but little from the receipts during 1894.

BUSINESS DEPRESSION.

It may be observed that all minor industries have suffered during the past year from the scarcity of money and the disinclination of capitalists to engage in enterprises. The entire Republic has been affected by contraction of trade and lack of employment for the masses, but this section has no doubt suffered less than any other.

FEELING TOWARD THE UNITED STATES.

The position of the United States to-day with respect to Venezuela should have a most important effect upon our future trade relations with this country, and, indeed, with the greater part of South America. Should the boundary question be peacefully adjusted in such a manner that the Venezuelans feel that they have received due justice, appreciating at the same time that the intervention of our Government secured them a fair hearing, then our efforts to extend our commercial influence in the Republic would meet with a ready and enthusiastic response from the Venezuelan people, and our merchants and exporters should be quick to take advantage of the situation and strain every nerve to capture what might have been theirs years ago had they equaled their European rivals in energy and in their unceasing efforts to discover the best methods of satisfying the desires and even the caprices of the people.

UNDEVELOPED GOLD MINES.

It must not be forgotten, moreover, that trade is not the only thing to be considered in our relations with this country. The rich gold fields of the territory in dispute with British Guiana are yet practically untouched, in spite of the many mining enterprises that have been attempted in that section. It should be remembered that the first mine properly worked in

the territory was opened by an American company, incorporated in Philadelphia under the title of the Orinoco Mining Company. This American organization shortly afterwards sunk another mine a few miles from the Orinoco, incorporated separately with the designation of the South American Mining Company. These were the first enterprises of the kind duly fitted out with stamp mills and other accessories, so the Americans were really the pioneers in practical gold mining in that region. It is true that desultory washings and placer mining had previously been carried on along the Cicapra River, but these were not organized enterprises, and no attempt at quartz crushing and scientific mining was made until the advent of the Orinoco company. This and the South American gave excellent returns from the first, but both finally became the property of an English company. These two mines were afterwards worked under other names, but, I believe, are now idle. With favorable concessions and good faith on the part of the Venezuelan Government, which there would be no reason to doubt, gold mining in this region should be immensely profitable, and especially favorable concessions might be obtained by Americans, who would, most likely, have the preference over other nationalities when the boundary question is definitely settled.

FRIENDLY EXPRESSIONS BY VENEZUELIANS.

Referring again to the existing feeling in Venezuela respecting the attitude of the United States, I beg to mention that in this consular district the popular expressions of gratitude and fraternal feeling have been many and enthusiastic. On two occasions the people of this city formed in procession, with the interlaced colors of the United States and Venezuela, and after parading the streets, halted in front of the consulate, where addresses were made highly eulogistic of our country and its Government and expressing eternal gratitude. As I have already had the honor to report, I replied briefly, thanking the citizens for their friendly manifestation. I have also received communications from the superior and supreme courts of this State, as well as from various societies, benevolent and other, all more or less of the same tenor and effusive in their expressions of gratitude and appreciation. In Coro and in the State of Los Andes a similar feeling universally prevails.

Should this popular sentiment continue, and the final adjustment of the pending question be satisfactory to Venezuela, I may reaffirm my previous statement that judicious and energetic methods on the part of our merchants and manufacturers are all that is necessary to enable us to far outstrip our European competitors in the race for commercial supremacy. I have in many previous reports dwelt repeatedly upon the necessity of making a careful study of the peculiar requirements of these markets, without which there can be no success.

E. H. PLUMACHER,

Consul.

MARACAIBO, *February 6, 1896.*

SHIPPING AND HARBOR IMPROVEMENTS AT MARACAIBO.

I inclose the list of arrivals of vessels at this port during the past calendar year. The only notable difference from the returns for 1894 appears in the arrivals of American steamers, these having increased from forty-two to sixty. This has been owing, in great part, to the increased service of the Red D Line and also to extraordinary trips necessitated by the accumulation of coffee at this port. No coffee whatever now leaves this port except in the steamers of the American line. Even that intended for direct shipment to Europe goes as far as Curaçao in these vessels. All cargo from the United States and that from Europe via Curaçao also arrives at Maracaibo in the Red D steamers, and it is thus gratifying to note that both the export and import trade of a very extensive section both of Venezuela and Colombia is chiefly carried on under our flag.

I have been pleased, in my yearly reports, to be able to make favorable mention of this excellent line, which has been a principal factor in extending our commercial interests on this coast, and the regularity of its service and the acceptability of its methods merit renewed commendation.

Four American sailing vessels (all schooners) arrived during the past twelve months, but it is not to be expected that many sailing vessels will arrive at Maracaibo from the United States unless there should be an extraordinary demand for wood or divi-divi. At some future day, when the timber resources of this section are generally known, there will, perhaps, be a large number of sailing craft chartered at home to load in Lake Maracaibo the various valuable woods which, as yet, are practically unknown in the markets of the world. At present, the steamers fill all the requirements of trade.

The project of improving the bars which obstruct the entrance to this great inland sea, to which I have referred in previous reports, is still under consideration, and the present government of this State, which has yet two years to serve, is very desirous of, at least, initiating this most important work.

Nothing could be more conducive to the rapid progress of Maracaibo and of the section of which it is the metropolis than a safe channel to the city's wharves for vessels of heavy draft. The limit is now $10\frac{1}{2}$ feet, and while this drawback exists, Maracaibo can not hope to obtain the predominance to which it is entitled by its commercial importance and exceptionally favorable position.

The harbor of Maracaibo has been in process of improvement for more than two years past, and the works, when completed, will give much greater facilities to shipping.

A sea wall of concrete has taken the place of the old beach, and an additional mole has been extended into the lake, with the object of permitting vessels to load and discharge directly thereon, thus doing away with the necessity of lighterage. The contractors are also obliged to erect handsome

and substantial buildings for the custom-house and its accessories, and these, when completed, will form a notable addition to the public edifices of the city. Work, however, is progressing very slowly, and, most probably, another two years will elapse before the completion of operations.

The interior navigation of the lake and its tributary rivers is active and flourishing, increasing in importance every year. Scarcely a day passes that steamers engaged in this trade do not arrive or depart, besides which there is a multitude of sailing craft constantly employed.

Arrivals of vessels at Maracaibo during the year ending December 31, 1895.

Flag.	Steamers.	Barks.	Brigs.	Schooners.	Total.
American.....	60			4	64
British.....		2	4		6
French.....		2	3		5
German.....		1	5		6
Danish.....		3	2		5
Norwegian.....		4			4
Swedish.....		1			1
Dutch.....				6	6
Italian.....			3		3
Venezuelan.....				62	62
Total.....	60	13	17	72	162

E. H. PLUMACHER,

Consul.

MARACAIBO, *February 7, 1896.*

FRENCH GUIANA: RESOURCES, TRADE, ETC.

I submit herewith my commercial report for the year 1895. I have made the utmost efforts to obtain all the particulars of interest concerning the trade and mining and agricultural operations in this colony. It has been difficult to procure reliable data, the official statistics being very defective.

POPULATION.

The population of French Guiana at the date of the last census (October last) was as follows:

Communes.	Inhabitants.	Communes.	Inhabitants.
Cayenne.....	12,351	Iracoubo.....	614
Roura.....	747	Mana.....	1,602
Tonnegrande.....	291	Oyapock.....	866
Montsinery.....	325	Appronague.....	554
Matoury.....	343	Kaw.....	213
Kemire.....	577	Maroni.....	1,279
Macouria.....	754	Total.....	22,714
Kourou.....	822		
Sinnamary.....	1,376		

To this number should be added 3,979 convicts, 1,817 banished (relegués), 300 Bonis (Indian negroes), and about 1,500 primitive Indian inhabitants belonging to the colony, which give a total population of 30,310, an increase over the last census of 1,893.

GOLD PRODUCTION.

This increase in population seems to be the result of the new discoveries of gold mines in the contested territory between France and Brazil, in Carswene, Counani, and other places, where there was a rush of miners of all ages and of all nations, attracted by the really marvelous results obtained by the first prospectors.

From the official statistics made up December 1, 1895, it appears that during the first eleven months of 1895, 1,808.796 kilograms of melted gold and 670.771 kilograms in dust were exported, against 3,877.243 kilograms and 533.11 kilograms, in 1894. Following is the statement published in the *Moniteur de la Guyane*: Quantity of gold entered at the custom-house of Cayenne from the 1st of January, 1895, to the 30th of November, 2,366.347 kilograms; gold entered in December, 1895, 441.154 kilograms; total for the twelve months of 1895, 2,807.501 kilograms. The total production of the contested territory (Carswene and Counani) was 1,921.313 kilograms for the year; the other mining districts, 886.188 kilograms only.

GENERAL TRADE.

From any other point of view, the local trade has not progressed as much as the increase of population would seem to warrant. Following is a statement of the colony's produce exported during 1895:

Articles.	Quantity.	Articles.	Quantity.
Odoriferous nuts.....kilograms...	30	Oxhides.....number...	1,599
Cacao, crude.....do.....	14,894	Native gold:	
Coffee.....do.....	67	Melted.....kilograms...	1,808.796
Conac.....do.....	53	Unmelted.....do.....	670.771
Feathers for dress.....do.....	35	Phosphate rock.....do.....	4,210,136
Tafia and rum.....liters...	220,851	Auriferous quartz.....do.....	346
Fish sounds.....kilograms...	634.5	Essence de bois de Rose (essence of rosewood).....kilograms...	574
Building wood.....cubic meters...	194		

The exportation of phosphate rock of the Grand Connétable was 4,210,136 kilograms, against 6,378,130 kilograms during the same period of 1894. The result of the falling off is a smaller number of vessels reported as going to take cargo from that island. The deposits are far from being overworked. No cabinetwork wood was shipped in 1895, and but 194 cubic meters of building wood, although the French Guiana forests are full of trees the wood of which is highly appreciated and sought after as being most valuable for building, especially for railroads, naval construction, etc.

Two Guianese manufacturers are engaged in the production of the "essence de bois de Rose"—common rosewood essence. The output is of very little importance (574 kilograms).

BALATA GUM.

An interesting point for the future development of French Guiana was debated some years ago without any practical result, viz, the working of balata gum, similar to, and even better, than the ordinary india rubber. A scheme of regulations for grants of concessions was elaborated in 1892 by the director of the interior; but they were soon found to be defective, and a new plan, stimulated by the discussions of the council-general, is now being perfected, and it is thought it will answer all the requirements of future grantees in helping forward their searches.

On the 5th of December, 1895, thirty concessions for the balata industry had been granted to people in the colony and two or three granted in France and Europe. A concession has just been given to the representative of an important company of New York (Franco-American India-Rubber Company) under special conditions agreed upon between Mr. J. M. Jean and the director of interior. Up to the present, the above company is in the "prospecting" stage; however, it seems to be satisfied with the first results, and was able in a very short time to ship to New York about 308 kilograms of india rubber ("gomme de balata").

SCARCITY OF LABOR.

Several efforts have been made to introduce into French Guiana laborers needed for agriculture and other industries, as the mining industry is taking all the best hands that can be had. The last scheme was to secure the immigration of Senegalese. In the preliminary efforts, over 100,000 francs have been spent. The result of the experiment is yet to be seen.

HIGHER DUTY ON MOLASSES.

High protective duties have been imposed on molasses coming from foreign ports to Cayenne, and this increase has greatly injured an important distillery and other distilleries of less consequence. Not being able to get their supply on the market, these distilleries were importing their molasses from the neighboring colonies—Georgetown, Paramaribo, and Barbados.

CACAO CULTURE.

The cacao seed, which is of the best quality in French Guiana and superior to Caracas cacao, is scarcely exported on account of the want of laborers. Good results would follow the development of the cacao industry together with the culture of annotto (rocou), now abandoned. There is a great number of wild cacao trees in the forest. The wild fruit has a bitter taste, but it might be easily removed by a process known, it is said, by the native Amazon Indians, which some travelers are trying to learn.

HYGIENIC CONDITIONS AND NATURAL RESOURCES.

In my opinion, and I have been living in this country for twenty-three years, the reputation for insalubrity of French Guiana is not deserved, at least, to the degree usually supposed. The difficulties as to food and lodg-

ing accommodations have been increased by the great number of people arriving here. Cayenne has no boarding houses, no good hotels, and the lack of comfort and conveniences for travelers has doubtless much to do with creating unfavorable impressions of the country.

The lands of the colony are among the best on the globe. The forests contain all sort of trees and medicinal plants, such as sarsaparilla and others. Cacao, sugar cane, cotton, and coffee trees producing "café de la montagne d'argent"—a very scarce and celebrated coffee—grow luxuriantly; but all these valuable resources are undeveloped for lack of laborers to till the soil.

The principal source of Government revenue is the produce of the gold mines. This is essentially uncertain and at any moment may fail. A few thousands of laborers introduced into the colony would raise this country to an economic condition which would be worthy of serious attention.

LEON WACONGNE,

Consul.

CAVENNE, *January 31, 1896.*

SUGAR CROP OF CUBA.

I inclose a statement prepared by Don Joaquin Gumá, a competent sugar statistician, of the exports and stock of sugar in this island on the 31st ultimo, showing that only 23,809 tons had been received up to that date of this year's crop, against 145,337 tons received at the same date last year.

RAMON O. WILLIAMS,

Consul-General.

HABANA, *February 7, 1896.*

Statement of exports and stock of sugars January 31, 1896, compared with the same date in 1895.

Provinces.	1895.			1896.		
	Sacks.	Hogs-heads.	Tons.	Sacks.	Hogs-heads.	Tons.
<i>Exports.</i>						
Habana.....	68,497			298,182		
Matanzas.....	31,220			33,608		
Cardenas.....	46,019					
Cienfuegos.....	66,438			2,500		
Sagua la Grande.....	28,339					
Caibarién.....				19,590		
Guantanamo.....	9,790			2,810		
Cuba.....	21,270					
Manzanillo.....				8,900		
Nuevitas.....						
Gibara.....						
Zaza.....						
Trinidad.....						
Total.....	271,582		37,585	365,590		50,595

Statement of exports and stock of sugars January 31, 1896, etc.—Continued.

Provinces.	1895.			1896.		
	Sacks.	Hogs-heads.	Tons.	Sacks.	Hogs-heads.	Tons.
<i>Stock.</i>						
Habana.....	257,750	32		314,287	50	
Matanzas.....	193,438			13,289		
Cardenas.....	124,045			1,985		
Cienfuegos.....	66,293			11,908	178	
Sagua la Grande.....	36,766					
Caibarién.....	72,060			4,050		
Guantanamo.....	31,724			30,514		
Cuba.....	10,166			2,890		
Manzanillo.....	34,334			15,300		
Nuevitas.....	4,150			6,980		
Gibara.....	3,208					
Zaza.....	2,106					
Trinidad.....	8,500					
Total.....	844,540	32	116,900	401,203	228	55,681
Total exports and stock.....			154,485			106,276
Local consumption, one month.....			4,200			4,200
Grand total.....			158,685			110,476
Stock, January 1, old crop.....			13,348			86,667
Receipts up to January 31 in ports.....			145,337			23,809

NOTE.—Sacks of 310 pounds, hogsheads of 1,550 pounds, tons of 2,240 pounds.

JOAQUIN GUMÁ.

HABANA, *January 31, 1896.*

EXPORTS OF SUGAR.

I have the honor to submit the following approximate statement of the exports of sugar from this island (mostly remaining over out of last year's crop) during the months of January and February of this year from the Provinces of Habana, Matanzas, Cardenas, Cienfuegos, Sagua la Grande, and Caibarién: To United States, 420,290 bags; to Spain, 14,393 bags; total, 434,683 bags. This shows the following percentages: To the United States, 96.68; to Spain, 3.32.

Communication with the rest of the island being interrupted, there is no attainable data, at present, of the exports from Guantanamo, Santiago de Cuba, Manzanillo, Zaza, Trinidad, Gibara, and Nuevitas, from which ports nearly all the shipments of sugar go to the United States.

RAMON O. WILLIAMS,
Consul-General.

HABANA, *March 3, 1896.*

The sugar planters in this part of Cuba are grinding the unburned portion of their cane. The work is materially retarded because plantation

hands can not be induced to work at night, fearing an attack of the insurgents. Whether planters will be allowed by the insurgents to continue sugar making, remains problematical. The greater part of the insurgent forces are now several hundred miles west of here, and it is possible that sugar making may proceed undisturbed; if so, I predict half a crop in my consular district.

PULASKI F. HYATT,

Consul.

SANTIAGO DE CUBA, *February 1, 1896.*

HARVESTING OF THE CUBAN SUGAR CROP.

I inclose a translation of an account given in the Boletín Comercial, of last evening, of a conference held the day before by a commission representing the board of sugar planters with General Weyler, the present governor-general of this island, in which he gave assurance of his endeavors to enable the planters to commence the harvesting of their crops in the provinces of Pinar del Río, Habana, Matanzas, and Santa Clara by the middle of next month.

I beg to add, for the information of the Department, that I understand the planters of the two remaining provinces of the island—Puerto Principe and Santiago de Cuba—are making their crops, though not with the usual activity, being somewhat short of laborers.

RAMON O. WILLIAMS,

HABANA, *February 14, 1896.*

Consul-General.

[Translation from El Boletín Comercial, of Habana, February 13, 1896.]

GENERAL WEYLER AND THE SUGAR PLANTERS.

A committee representing the board of sugar planters conferred yesterday afternoon with the governor-general. The conference was lengthy and interesting, and the declarations of our first authority to the representatives of the principal industry of the island were highly satisfactory.

General Weyler told them that the situation was serious, but, notwithstanding its gravity, he would endeavor to facilitate the grinding of the cane by all the plantations in the provinces of Pinar del Río, Habana, Matanzas, and Santa Clara (Las Villas) by the middle of next month, and then added: "You can have detachments of mobilized volunteers for your plantations, you responding for their loyalty. I will furnish everything needed for their maintenance."

CUBA AND THE BEET-SUGAR CROP.

I have the honor to inclose a translation of an extract from the Boletín Comercial, of this city, which may be of interest as illustrating the economic condition of Cuba.

RAMON O. WILLIAMS,

HABANA, *February 14, 1896.*

Consul-General.

[Translation from *El Boletín Comercial*, of Habana, February 12, 1896.]

THE EUROPEAN BEET-SUGAR CROP.

From the latest newspapers received, reaching to the 23d ultimo, we extract the following accounts:

"The advices from Cuba have induced the cultivators of beets to prepare for a considerable increase in the sowing of the seed, and large contracts have been made for the next crop at prices varying between 25 and 26 francs per metric ton, base 7 degrees of density, which are agreeably acceptable to the cultivators, and as only an increase of 12 per cent in the planting is necessary to offset the deficiency in Cuba, it is probable that the production of the beet-sugar crop of Europe will largely exceed the 600,000 tons additional that will be required by the general consumption, which has averaged 7,500,000 tons during the last few years."

In consequence of the great extension now being given in all the beet-sugar countries, it is feared, with reason, that a surplus production will again depress the market, and to the end of evading the decline in next year's price that is already glimmering, one of the principal factories of France writes to the *Journal des Fabricants de Sucre*, of Paris, asking its aid in bringing about an agreement between all the European sugar factories for their closure on the 5th of next December at the latest.

DEPRESSION IN JERKED-BEEF TRADE OF CUBA.

With reference to former dispatches on the jerked-beef trade of Cuba with the River Plate and the system of partial protection on which the commerce of this island is founded, I beg to commend to attentive perusal the accompanying translation of an article published yesterday by *El Diario de la Marina*, of this city, on that trade.

RAMON O. WILLIAMS,
Consul-General.

HABANA, *February 24, 1896.*

[Translation from *El Diario de la Marina*, of Habana, February 23, 1896.]

Among the very serious damages wrought by the war is that of the lessening of mercantile transactions, and, as a matter of course, the decline of commerce. All the trade of this island feels the effects of the precarious situation brought on by the war. But there is one article that, hitherto, has furnished a singularly copious fountain of revenue to the treasury and of welfare to many peninsular as well as Cuban families, whose importation is now very difficult—indeed, almost impossible—by reason of its reduced demand and of its great supply on hand, and which, from absence of buyers, may become the cause of great losses. We refer to South American jerked beef.

The monthly consumption of this article, which usually averaged 35,000 quintals (3,500,000 pounds), has fallen off three-fourths.

As it was not possible to foresee the increase of the superficial extension of territory over which the insurgents move of late, the importers of jerked beef did not reduce their orders in proportion to the present decrease of consumption, and they now find themselves not only with their stores full, but are also expecting new arrivals of the same article, which they will likely have to throw into the sea rather than pay large amounts to the custom-house for import duties without any show of returns.

We are told that there are several vessels loaded with jerked beef for this island now waiting in foreign ports (Buenos Ayres and Montevideo) to see the course of consumption developed here; and if this continues to decline, or becomes simply paralyzed, the owners will have to get rid of the merchandise the best they can, even if they have to throw it away, notwithstanding it is already paid for; because they will suffer less loss in this manner than by paying the additional costs of freight and customs duties.

Such is the situation brought on the importers of South American jerked beef. And their misfortune can not be attributed to want of foresight, for every cargo arrives here five or six months after it has been ordered, owing to the difficulty of communication with the producing countries and of being carried in sailing vessels, and, lastly, because weeks pass after the arrival of the order in South America before loading, because of the custom of the seller to not prepare the meat till the order arrives, and then only to the extent of requirements.

We believe there is a means of putting a stop to this unfavorable situation, not only to the benefit of the importer of provisions, but likewise in favor of the public treasury. And that means consists in supplying this South American jerked beef to the country people who have flocked to the towns in search of aid from the boards of relief instituted under Government protection, and to substitute this article, in a certain proportion, in furnishing the food of the army. The first mentioned—that is, the country people—would gladly receive some jerked beef among their rations, for they are already accustomed to eat it daily. It is very likely, too, that the soldiers would accustom themselves to it, if given with other articles of food.

Such a measure would bring a saving to the Government, for it could obtain the jerked beef at something less than half what it pays for fresh meat and salt pork, and it would have the advantage also of being an article that does not spoil quickly, besides possessing the advantage in military operations, after cooking, of lasting several days without decomposition. The treasury would also continue to collect the revenues on salted meats.

Apart from the benefits accruing to the treasury, there exists another of much interest—that of not closing to many families on the coast of Catalonia the fountain from which they draw their only means of living; for it is known that the vessels that carry the jerked beef between the River Plate and Cuba are owned wholly in Catalonia, and the owners would have to tie them up and discharge the crews if that trade should become extinguished or should be largely reduced.

Lastly, the measures would greatly favor the importation of provisions, now so depressed by effects of the war, and so worthy of Government protection, by reason of the sacrifices that the importers impose upon themselves at the altar of their country in defense of the integrity of its territory; especially, since that protection injures no particular interest, but is beneficial to all, there can be no reason for withholding it.

THE ARGENTINE REPUBLIC: COMMERCE, FINANCE, AND INDUSTRIES IN 1895.

INTRODUCTION.

I have the honor to submit my annual report of the industries, commerce, finance, etc., of the Argentine Republic for the year 1895. The preparation of the report has been delayed awaiting the publication of the Argentine custom-house returns.

As heretofore, I have to state that I am not responsible for any errors of addition or computation that may be found in the tables, as the figures are given as contained in the returns of the national statistical office or reports.

I have omitted the Argentine tariff for 1896, for the reason that it has

only just been passed by the Congress, and has not yet been officially published. So soon as I can procure a copy, I will translate it for a separate report.

REVIVAL OF BUSINESS.

The year just closed came in in the midst of political difficulties which threatened to be serious for the peace of the Argentine Republic, but the differences between the President and the National Congress were accommodated on the 22d of January by the resignation of Dr. Saenz Peña from the Presidency and the installation of the Vice-President, Señor José E. Uriburu, to the vacancy. With this change, the administration of the Government has continued through the year to move on in peace and quietness, to the general benefit of trade and commerce. While the improvement has not been so decided as could have been desired, the last year's record gives unmistakable evidence that the country is gradually recovering from the effects of the late depression. The timidity with reference to commercial and industrial operations, which for several years had characterized business generally, has given place to greater confidence, and everywhere, in every department of trade and in the industries of the country, there is visible a greater and a better movement. There is now every reason to believe that the worst of the long-continued crisis is over, and that in the planting of new industries and the development of those already in existence, the Argentine Republic is about to take a new lease on prosperity. If it be said that the moneyed interests continue to "go slow," at least this is safer than the breakneck speed at which, a few years ago, the country undertook to advance. This improved feeling among business men is owing to their increased confidence in the good intentions of the General Government.

It must be confessed, however, that the national finances continue to be in a very unsatisfactory condition. The movement which last year was made in the National Congress to have the General Government assume the debts of the several provinces, is still pending, and finds great opposition in its progress—the argument against it being, in the first place, that the nation is not responsible for such debts, and, in the second, that as it is not able to pay the interest on its own obligations, it is rather absurd for it to undertake to meet the service of the provincial debts.

Another cause of disturbance to the business of the country has been the unsettled limits question between the Argentine Republic and Chile. At times, the situation seemed quite critical, and both governments have, during the year, made large expenditures for arms and implements of war; but better counsels seem finally to have prevailed, and the clouds which threatened the peace of the country have now apparently quite disappeared.

IMMIGRATION.

Owing to the condition of the national finances, the continued depression in the general business of the country, and the depreciation in the paper currency which pays for labor, the tide of immigration, which, at one time,

seemed almost ready to equal that to the United States, has, during the last few years, shown a great falling off, and for the year just closed the figures are even less encouraging. During the year 1895 the movement was as follows:

Description.	Arrivals.	Departures.
Passengers by ocean steamers.....	4,333	4,799
Passengers by way of Montevideo.....	15,315	12,134
Immigrants by ocean steamers.....	61,226	20,398
Immigrants by way of Montevideo.....	19,662	16,422
Total.....	100,536	53,753

The net immigration to the Argentine Republic for 1895 was 46,783 persons; in 1894, 54,720; and in 1893, 52,007. For the last five years, the total has been 220,000 arrivals. The great majority of the immigrants continue to come from Italy. For the last year, Italian immigration was 65 per cent of the whole, and 18,912 were families.

NATIONAL CENSUS OF THE COUNTRY.

In pursuance of a law passed at the last session of the National Congress, during the year there has been taken a general census of the Argentine Republic. The detailed returns have not yet been elaborated and published, but the population of the country is stated to be as follows:

Divisions.	Population.	Divisions.	Population.
Buenos Ayres (the capital).....	662,763	Territories:	
Provinces:		Misiones.....	33,005
Buenos Ayres.....	921,232	Formosa.....	4,829
Santa Fé.....	397,632	Chaco.....	10,280
Entre Ríos.....	302,000	Martin García.....	656
Corrientes.....	239,546	Pampa.....	25,521
Cordoba.....	351,346	Neuquen.....	14,518
San Luis.....	81,155	Rio Negro.....	6,153
Mendoza.....	116,676	Chubut.....	3,748
San Juan.....	84,964	Santa Cruz.....	1,014
La Rioja.....	69,228	Tierra del Fuego.....	477
Catamarca.....	90,187	Total.....	3,963,646
Santiago.....	160,495		
Tucuman.....	215,693		
Salta.....	118,139		
Jujuy.....	49,568		

The only other official census of the Republic was taken twenty-five years ago (1869), and it gave the population at 1,737,023, the last census showing an increase of 2,226,623. The returns of the immigration office show that the number of immigrants remaining in the country since 1857 is 1,548,404, so that the foreign element of the Argentine Republic now amounts to over one-third of the whole population, the greater portion—say two-thirds—of which is from Italy; Spain and France contribute the larger share of the rest.

AGRICULTURAL INDUSTRY.

It is to this foreign element that the country is in great part indebted for the development of its agricultural industry, and, as immigration increases, the area of land under cereal cultivation will also increase. When the national census is published, we shall have some official figures in reference to the number of acres now down in the different crops; but, as I have heretofore stated in my reports, the various estimates made on this subject are pretty much guesswork. The only official figures we at present have in regard to Argentine agriculture are those which the export tables afford. For the year 1894 these were as follows:

Agricultural exports in 1894.

Products.	Quantity.	Value.
	<i>Tons.</i>	
Linseed.....	104,435	\$3,583,459
Rye.....	2,982	40,810
Maize.....	54,876	1,046,007
Baled alfalfa.....	47,618	456,386
Oats.....	1,665	29,489
Barley.....	673	10,041
Wheat.....	1,608,249	27,118,142
Other crops.....	2,454	203,804
Sundries.....		32,038
Total.....		32,520,176

The total agricultural exports for 1893 amounted to \$29,017,405, thus showing an increase of \$3,502,771.

The people of the United States are, however, especially interested in the wheat and corn exports of the Argentine Republic, and, as a matter of comparison, I bring the table down since 1882, when this country for the first time produced a surplus.

Exports for the last fourteen years.

Year.	Wheat.	Corn.	Flour.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
1882.....	1,700	107,000	.....
1883.....	61,000	19,000	.....
1884.....	108,499	113,710	3,734
1885.....	78,493	197,859	7,447
1886.....	37,864	231,660	5,262
1887.....	257,865	361,844	5,242
1888.....	178,928	162,037	6,392
1889.....	22,806	432,590	3,360
1890.....	327,894	707,281	12,027
1891.....	395,555	65,908	7,015
1892.....	470,109	445,935	18,849
1893.....	1,008,137	80,514	37,921
1894.....	1,608,249	54,876	40,758
1895 (9 months).....	1,471,649	513,443	36,976

THE HARVEST OF 1895-96.

The prospect that the harvest of 1895-96 would show an increase of products over any previous year, as has been confidently predicted, is hardly likely to be realized. The season has been unusually wet, with heavy wind storms, and from various parts of the Provinces of Santa Fé and Buenos Ayres come reports that serious damage has been done to both the wheat and the maize crops. There are also reports that the locusts have appeared in some of the districts of Santa Fé. The extent of losses can yet only be conjectured. The harvest has been somewhat delayed by the rains, but there are indications that it will not be so large as it at one time promised to be. On this subject, as a matter of opinion, I translate from the *Prensa* (newspaper), of this city, as its estimate of the present harvest, the following paragraphs:

The official data which we have received from the Province of Santa Fé differ materially from those heretofore published. The area in crops this year (1895-96) is as follows:

Crops.	Area.	
	Hectares.	Acres.
Wheat.....	1,068,066	2,639,191
Linseed.....	417,565	1,031,803
Maize.....	156,688	387,176

The yield will probably be, of wheat, 890 kilograms per hectare (13.17 bushels per acre); of linseed, 775 kilograms per hectare (15.36 bushels per acre); and of maize, 549 kilograms per hectare (8.7 bushels per acre). On this estimate, the harvest of wheat would, this year, in the Province of Santa Fé, amount to 1,056,000 tons (38,800,960 bushels); of linseed, 320,000 tons (15,677,156 bushels); and of maize, 86,000 tons (3,385,626 bushels). The previous harvest in that Province amounted to 780,000 tons (28,659,800 bushels) of wheat, 205,000 tons (10,043,178 bushels) of linseed, and 120,000 tons (4,724,143 bushels) of maize.

So much for Santa Fé. In the other agricultural provinces, the area planted in wheat is as follows:

Provinces.	Area.	
	Hectares.	Acres.
Entre Rios.....	206,000	731,406
Cordoba.....	300,000	741,300
Buenos Ayres.....	400,000	988,400

With a yield of 775 kilograms per hectare (11.6 bushels per acre) the crop in those provinces will be 1,672,000 tons (61,434,885 bushels) of wheat. This, added to 1,056,000 tons (38,800,960 bushels), the estimated yield in Santa Fé, will put the total wheat harvest of the Argentine Republic for this season at 2,728,000 tons (102,069,147 bushels), or 10 per cent greater than that of the previous harvest.

Making allowances for losses by wet weather, locusts, and other unforeseen causes, the estimate of the *Prensa* may not be very far out of the way.

MOVEMENT OF ARGENTINE WHEAT.

In regard to the destination of the wheat exports from the Argentine Republic, according to English Board of Trade returns, the larger proportion goes to Great Britain or to the Channel for orders. The shipments, according to those returns, in 1894, were :

	Tons.
To the United Kingdom and orders.....	1,136,956
To the Continent of Europe.....	361,739
Total to European ports.....	*1,498,695

According to the Argentine national statistical office, the shipments of wheat in 1894 were :

Destination.	Quantity.	
	Tons.	Buskels.
Germany.....	75,021	2,756,522
West Indies.....	6,162	226,413
Belgium.....	235,634	8,657,979
Brazil.....	475,113	17,457,234
Spain.....	30,000	1,102,300
France.....	30,980	1,138,309
Italy.....	22,448	824,814
Holland.....	6,765	248,569
Paraguay.....	3,206	117,799
Portugal.....	2,617	96,157
Great Britain.....	687,378	25,293,302
Countries not named.....	31,025	1,173,031
Total.....	1,608,249	59,092,429

The discrepancy between the Argentine and the British Board of Trade returns would seem to be in the amount of shipments credited to Brazil. Which is correct?

THE PASTORAL INDUSTRY.

The pastoral continues to be the leading industry of the Argentine Republic, and, since the opening of permanent markets for cattle on the hoof and for frozen sheep carcasses, it is in a more prosperous condition than it was a few years ago, when it had a market only for its jerked-beef product. The estimated number of cattle, horses, and sheep in the country for the last year was as follows: Horned cattle, 22,869,385; horses, 4,398,283; sheep, 70,453,665. While the number of sheep is not estimated at so large a figure as it was five years ago, there is a great improvement in the size of the animals, owing to crossing the merinos with the Lincolns. It was not so much a question with estancieros to produce fine wool as to breed large-bodied sheep, the export of the carcasses requiring an improvement in this respect, in order to secure their sale in European markets.

The saladeros, or slaughterhouses for cattle, have all been running on full time during the last season, and the product compares very well with that of former years.

* Total, 55,951,280 bushels. The British ton = 2,240 pounds; the Argentine (metric) ton, 2,204.6 pounds.

The following table gives the exports of the principal pastoral products for the five years ending December 31, 1894:

Articles.	1890.	1891.	1892.	1893.	1894.
Ox horns.....tons.....	2,289	2,428	1,851	1,593	2,597
Bones.....do.....	38,787	51,086	28,847	37,419	47,487
Horsehair.....do.....	2,324	2,341	2,138	2,079	2,622
Cowhides:					
Dry.....number.....	3,053,649	2,678,909	2,845,189	3,181,237	3,954,483
Salted.....do.....	1,294,101	1,263,502	1,068,611	1,024,945	1,187,653
Jerked beef.....tons.....	43,481	39,635	44,699	41,151	42,835
Meat extract.....do.....	187	194	260	99	84
Hide cuttings.....do.....	1,822	1,784	1,433	1,448	1,309
Preserved tongues.....do.....	741	784	994	857	716
Dried blood.....do.....	492	648	964	1,102	890
Grease and tallow.....do.....	17,361	20,725	19,879	19,066	25,246
Salted meats.....do.....	474	2,876	7,040	2,178	658
Preserved meats.....do.....	76	248	907	301	718

EXPORTS OF WOOL AND SHEEPSKINS.

The exports of wool and sheepskins for the same period were:

Articles.	1890.	1891.	1892.	1893.	1894.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Sheepskins.....	27,148	24,170	32,060	25,569	36,756
Unwashed wool.....	118,405	138,605	154,635	132,230	161,907

For the first nine months of 1895, the exports of sheepskins were 21,596 tons; of wool, 148,257 tons.

The following table gives the countries to which the sheepskins and wool were exported in 1894:

Countries.	Sheepskins.	Wool.
	<i>Tons.</i>	<i>Tons.</i>
Germany.....	873	39,137
Belgium.....	398	30,918
United States.....	1,058	6,129
France.....	23,264	71,013
Italy.....	3,708	3,710
Great Britain.....	2,766	3,180
Countries not named.....	4,689	7,880
Total.....	37,756	161,907

It will be observed that France, Germany, and Belgium continue to take nearly all the wools of the Argentine Republic. While Great Britain monopolizes the Argentine trade in woollens and woolen goods, her raw wools all come from her own colonies. The exports of wool to the United States for 1894 show an increase of 1,680 tons over 1893 and of 903 tons over 1892.

The greater portion of the wool sent to the United States continues to be the Cordoba carpet wool or the Lincoln cross, which is used for yarns as well as carpets.

FROZEN SHEEP CARCASSES.

It was for the purpose of obtaining a larger-bodied sheep, suited to the export trade, that the Argentines were induced to cross their fine merinos with the Lincolns, and while the effect has been bad for the wool, it has had a marked result in increasing the frozen-carcass shipments. This business, which began only a few years ago, has now become a very important factor in the Argentine export trade. I give the following table of shipments of frozen sheep carcasses since 1885, when the industry was inaugurated:

Year.	Quantity.	Value.
	<i>Tons.</i>	
1885.....	2,860	\$75,323
1886.....	7,350	360,508
1887.....	12,038	963,112
1888.....	18,027	1,498,182
1889.....	17,487	1,399,276
1890.....	20,413	1,633,145
1891.....	23,741	1,899,360
1892.....	25,436	2,034,898
1893.....	25,049	2,003,254
1894.....	36,486	1,864,110
1895 (9 months).....	30,818	1,232,703

FROZEN QUARTERS OF BEEF.

Within the last four years, frozen beef in quarters and other frozen meats have also found a market in Brazil and Europe. The shipments thus far have been:

Year.	Quantity.	Value.
	<i>Tons.</i>	
1891.....	464	\$37,113
1892.....	899	71,912
1893.....	2,778	222,279
1894.....	266	12,400
1895 (9 months).....	1,060	42,407

EXPORTS OF LIVE ANIMALS.

The falling off in these shipments may, to some extent, be accounted for by the fact that it is found more economical to ship the cattle alive. The export of live animals to Brazil and to European markets has, in the last few years, grown to be a large and regular business, the steamers now engaged in the trade being fitted up with stalls and pens for the purpose. Besides this, large numbers of animals are driven over the mountains to Chile and Bolivia.

The following table shows the number of live animals exported during the last five years:

Animals.	1891.	1892.	1893.	1894.	1895.*
Asses.....	6,790	10,185	8,835	9,423	6,936
Horses.....	10,703	7,487	5,275	12,362	8,469
Sheep.....	114,691	40,100	71,167	122,218	335,288
Mules.....	14,703	16,514	12,842	14,426	14,471
Horned cattle.....	171,105	125,458	201,645	220,490	302,996

* 9 months.

Nearly all the asses are shipped to Bolivia; the horses to Brazil, Chile, and Uruguay; the sheep to Chile, Brazil, and Great Britain; the mules to Chile and Bolivia; and the horned cattle to Brazil, Chile, Uruguay, and Great Britain.

MINING INDUSTRY.

There is very little to be said, as usual, in regard to mines and mining in the Argentine Republic. It is the same old story; there are mining camps and establishments in the interior provinces. In some instances, expensive works have been erected and large amounts of money invested, but the output has been next to nothing. Not one of the gold or silver mines of the country has, thus far, paid expenses. Of late, I have heard of extensive movements on the head waters of the Chubut River, in Patagonia, where at least two companies are now working; also, promising reports of the Hall mines in Neuquen Territory, and disclosures of great expectations of the gold and silver mines in the Province of San Juan; but I do not put much faith in any of them.

I find the following article in the Review of the River Plate, of January 11, translated from the Nacion, which very truthfully gives the present condition of the mining industry of the Argentine Republic:

It is to be regretted that, although we have positive evidence that we possess the true bases of a great mining future, we have not been able to secure the investment of sufficient capital to develop the industry properly.

Notwithstanding this, there is considerable animation all the time in the mining districts throughout the Andine provinces and the national territories, where several companies are engaged in mining enterprises in spite of the difficulties caused by high freights and the fall in the value of silver, which only permits the export of mineral of very high assay.

* * * * *

Various companies are, nevertheless, working silver and copper which contain alloys of silver, gold, and galena, and extracting the metals at their own establishments with good result, especially in the provinces of Rioja, San Juan, and Mendoza; but, owing to the rise in the value of copper, more attention is being paid to these mines, since nearly all our auriferous quartz contains at the same time silver and gold in considerable quantities, which fact explains why, although copper has fallen so much in price in the last few years, and in spite of the long distances by cart and rail to the seaboard and subsequent export to Europe, the working of these mines has never ceased, more especially in Rioja, where a good interest

has been earned upon capital invested. At the present time, owing to the scarcity of pack mules in that province, the rich and important mines of the district of Famatina can not be worked as actively as they might, and this is the more to be regretted since if only the Dean Funes to Chilecito route were to be finished for the short distance that remains from Patquia to Chilecito, it would be easy to take up all the machinery necessary to wake that immensely rich district into feverish activity.

At the present moment, and owing to the enthusiasm for gold mines which has seized the public in Europe lately, the discovery and development of our mines is being contemplated by many, and we hear that two large syndicates are now being formed for the purpose of exploiting mines in the provinces of San Juan and Mendoza. At the same time, one or more companies are being formed for the purpose of working the gold mines of Cordoba.

In the national Territories of Neuquen and Chubut, also, there are three companies, formed with capital of the country, actively occupied in putting up extensive plants for the working of gold washings, and their properties have been duly marked out by the national Department of Mines and Geology, which department has received numerous applications for claims which will be attended to early in the year. Various applications have been made to the same department asking for claims for quartz mining in the same district of Neuquen, which are to be worked with Chilean capital by persons who have mining interests in Chile.

There is incontestable evidence, therefore, that in the whole length and breadth of the Cordillera and its spurs, right away down to Tierra del Fuego, there are immense auriferous zones, and if our capitals have not been drawn toward them, it is because there are so many easier and very lucrative investments to be had nearer home, besides which, the immense distances of the mining regions and the difficulties of transport have caused those districts to be almost unknown in this city. Now, however, that land speculations, railway investments, etc., are not so easy or so profitable, there are signs of attention being drawn to the mining industry, and there is no doubt that as soon as any faith in the business is established, we shall see great activity in the Andine provinces in mining and other allied industries.

It is, therefore, the more necessary for the miner, as well as for other parties interested in the development of this important industry, to endeavor to bring it into good repute, and for the companies to proceed with every precaution so as to avoid failure. Moreover, seeing that the mining industry is as yet almost in a nascent condition, there is no necessity for capitalists to touch any doubtful properties or schemes, as they have a vast field in which, by careful and competent study, they can work with the certainty of brilliant results, which they can not do in older countries.

I have uniformly expressed the opinion that there will some day be great discoveries of the precious metals in the regions of the Andes Mountains, but there has not as yet been any scientific exploration of those slopes, and until that is accomplished, I fear that the mining "boom" of the Argentine Republic must be remanded to the indefinite future.

The shipments of the precious metals, minerals, ores, etc., for 1894 were:

Description.	Value.	Description.	Value.
Auriferous sand.....	\$7,489	Lead ore.....	\$21,303
Copper in bars.....	36,103	Silver "peña".....	15,698
Tin ore.....	18,815	Regulus:	
Minerals:		Gold.....	3,100
Copper.....	21,831	Silver.....	19,520
Silver.....	51,909	Total.....	219,581
Lead.....	24,713		

TIMBER INDUSTRY.

In my former reports, I have made frequent reference to the wonderful timber resources of the Argentine Republic. They consist entirely of hard woods, susceptible of the finest polish, and specially adapted to cabinet and other fine work. For years, they have found a considerable market in Europe, though the expense of developing them—as they are found only in the far interior provinces and in the Chaco regions of the Paraná and Paraguay rivers—prevents them from coming into more general use. In the last few years, also, there has been much inquiry for red quebracho chips and extract for tanning purposes; and it is believed that a large business could be done by enterprising capitalists in meeting this demand. The timber industry, however, during the past year, has shown no increase in activity, though shipments to Europe have been quite steady, while the home consumption of these magnificent woods by the wood manufacturers now located here is beginning to assume considerable importance. In the following table, I give the value of annual exports of Argentine hard woods from 1875 to the present year:

Year.	Value.	Year.	Value.
1875.....	\$21,171	1886.....	\$326,623
1876.....	10,541	1887.....	330,214
1877.....	57,090	1888.....	781,793
1878.....	14,943	1889.....	799,257
1879.....	58,793	1890.....	1,413,224
1880.....	36,403	1891.....	2,145,510
1881.....	272,613	1892.....	1,066,819
1882.....	222,358	1893.....	1,618,220
1883.....	257,887	1894.....	1,511,145
1884.....	394,848	1895 (9 months).....	1,603,203
1885.....	339,022		

The exports of the extract of "quebracho Colorado" for the first nine months of 1895—the first time its export has appeared in the custom-house returns—amount to the sum of \$238,042. The exports of red quebracho chips or chunks (rollizos) in 1893 amounted to 63,297 tons, valued at \$632,970; in 1894, 74,358 tons, valued at \$743,582; for the first nine months of 1895, 127,330 tons, valued at \$1,273,298—thus showing the increasing demand for this timber for tanning purposes. Nearly all these shipments were destined for Great Britain.

Besides this foreign demand for the red quebracho, the demand for it at home continues to increase. In addition to the use of it for cabinetwork, furniture, doors, sills, window frames, etc., the immense timbers are employed for sleepers, beams, joists, bridges, and other like purposes. And now the streets of Buenos Ayres are being paved with red quebracho parallel-opipedons with most satisfactory results.

Several years ago, a movement was made to send the red cedar of the Misiones to the United States, and several cargoes were shipped; but the

expense of getting the timber to the banks of the Paraná River and thence down to tide water, to say nothing of ocean freights, soon proved that there was no money in the enterprise.

I have heretofore referred to the company organized in this city to bring the woods of Tierra del Fuego to Buenos Ayres. I understand that the project is being worked with some success. The timber received from there has the name of "caique." It is easily worked, and excellent for furniture. Here it goes under the name of "guindo." It is destined to have a good demand.

The manufacture of furniture here is an established industry. It began in 1890, when a prohibitive tariff was put upon the machine-made furniture of the United States, and it has so extended that now all the best styles and qualities of foreign furniture and cabinetwork are turned out in this city.

THE SUGAR INDUSTRY.

The sugar industry of the Argentine Republic in the last few years has had a wonderful development. Its principal seat, for years, has been in the Province of Tucuman, but it has now extended to other parts of the country, owing to the favorable conditions for manufacture. For the last ten years, the National Government has sought to foster and encourage the planting of sugar cane and the establishment of sugar presses by heavy duties on imported sugars, until now the tariff is almost prohibitive—the foreign article being subject to a specific duty of 9 cents per kilogram (2.2046 pounds) on refined and 7 cents per kilogram on crude sugars. This has had a wonderful effect in stimulating production. There may be some exaggeration in the figures which are published of the total sugar output of the country for the year just closed, but it is stated to be as follows: Production in Tucuman, 108,000 tons; in Salta, Santiago, and Jujuy, 11,000 tons; in Santa Fé, Chaco, Formosa, etc., 9,000 tons; total product in 1895, 128,000 tons. The output in 1894 is given at 84,000 tons, showing an increase in the production of 44,000 tons during the last year. Taking the population of the country to be 4,000,000 and assuming that the consumption is 17 kilograms (37.48 pounds) per inhabitant, it would appear that the production of sugar is now enough to meet the wants of the people and leave a large surplus for export. The returns, however, show that some sugar continues to be imported. In 1893, the imports were 9,884 tons; in 1894, 12,061 tons; and for the first nine months of 1895, only 4,845 tons. At the present rate of production, it is evident the Argentine Republic will soon be offering sugars for sale to the outside world. There is at present but one refinery in the Republic, located at Rosario; but it is large and well equipped and is doing an extensive business.

WINE INDUSTRY.

Another of the established industries of the country is viticulture. There is no more favorable locality in the world for the production of vines than the Cuyo provinces of the Argentine Republic, and the wines which come

here from those Andine regions are getting to have more than a national reputation. The development of the industry has been gradual, but sure, those engaged in the business being anxious by experiment to test the wine-producing conditions of the country and ambitious to turn out such products as would stand the test of criticism before embarking too extensively in their manufacture. Certain it is that the qualities of the clarets, sauternes, ports, and sherries of native production are far superior to the importations, which, in too many instances, are foisted upon the Argentine people as genuine wines.

The Andine provinces now have extensive vineyards, and their bodegas contain wines of the finest vintage. President Uriburu, in his late message to the Argentine Congress, says:

There are now in the country 28,800 hectares (71,165 acres) of vines, which in 1895 produced 1,600,000 hectoliters (42,267,200 gallons) of wine, 10,582 tons of raisins, and 18,125 hectoliters (478,800 gallons) of alcohol.

The distribution of the vineyards of the Argentine Republic is about as follows:

Provinces.	Area.	
	Hectares.	Acres.
Mendoza.....	13,000	32,123
San Juan.....	10,000	24,770
Entre Rios.....	3,000	7,413
Salta.....	800	1,947
All other.....	2,000	4,942
Total.....	28,800	71,135

Each year, there are wider breadths of land put down in vines, and it is found that not merely in the Andine provinces, but also in the Riverine provinces, the finest varieties of French, Spanish, and German grapes mature to the greatest perfection and bouquet. The markets here in the season are supplied with the most delicious varieties and at the most reasonable prices. The industry promises to be one of the most important and most profitable in the country. Already it is reaching out for foreign markets.

PRODUCTION OF HIGH WINES AND WHISKY.

In regard to the production of liquors distilled from maize or sugar cane, the facilities for their manufacture are far in advance of the demands of the country or the wants of the people. There are twenty-one distilleries in operation, which, together, have a productive capacity of 60,000,000 liters (15,850,500 gallons). Besides these, there are fifty-five sugar establishments which have distillery attachments for utilizing the dregs of the sugar cane, with a productive capacity of 40,000,000 liters (10,567,000 gallons), making the total productive capacity in the neighborhood of 100,000,000 liters (26,417,500 gallons), while the annual consumption is only about 30,000,000 liters (7,925,222 gallons). This excessive production has made alcohols

and high wines a drug in the market, selling for 10 cents per liter (1.0537 quarts). The internal revenue derived from distilled spirits in 1895 was about \$5,000,000 in paper, equal to \$1,700,000 in gold. The duty on foreign spirits is about 10 cents (gold) per liter.

BREWERIES.

There are now breweries in all parts of the country, and the production is large and the quality so good that it is not possible to import foreign beers and ales at a profit. The duty on the foreign article is 12 cents per bottle, whereas the native beer sells for about 10 cents per bottle.

THE DAIRY INDUSTRY.

Twenty years ago, horned cattle were raised for their hides, tallow, and flesh. Of the 22,000,000 in the country, it was almost impossible to find a milch cow on any estancia. The milk used in the coffee of the camp was "condensed milk" from Illinois; butter was a luxury which was not visible in many households; and the cheeses all came from Europe. Within the last few years a great change has been effected in these respects in the Argentine Republic. The native, or "créolla," cattle have been crossed with the Durham and the Devonshire; and dairies are now to be found all over this part of the country. Fresh milk is everywhere in the market; butter, the most delicious in the world, is to be obtained for from 30 to 40 cents per pound; and cheese of excellent quality is manufactured at several establishments in this province and the Province of Santa Fé. Indeed, the butter and cheese of this country are already becoming articles of export. For nine months of 1895 the shipments of butter amounted to 147 tons, and of cheese to 54 tons; and their qualities are so fine that the business promises to have an indefinite expansion.

TEXTILE INDUSTRY.

The textile industries have, as yet, scarcely a foothold in the country, though in the last few years, there has been some movement in the manufacture of goods which have textile fibers for their base. When we consider, however, the amount of woolen, cotton, and linen fabrics which are imported into the country, averaging annually not less than \$30,000,000, the wonder is that there are not more milling establishments. So far as cottons are concerned, there may be some reason for this in the fact that the fiber is not grown in the country except to a very small extent; but hemp and flax are produced in large quantities, the fiber of which is not utilized at all, even for export. With 70,000,000 sheep on the pampas, it would seem natural that there should be found ways and means to utilize the wool here at home to a greater extent than is now done, instead of paying tribute to other countries in shipping away the raw wool and then receiving it back in manufactured goods. There is, however, one very large woolen plant in Buenos Ayres, which turns out every variety of blankets and flannels and also cloth

for soldiers' clothing. There are also several establishments for the production of knit goods, such as stockings, undershirts, drawers, and other like articles, and they all seem to be full of work.

OTHER INDUSTRIAL ESTABLISHMENTS.

There are various other establishments in the country engaged in the manufacture of articles for which there is a home demand. Among these, are foundries for making all kinds of ironwork, machinery, safes, all kinds of agricultural implements, cooking and other stoves, iron beds and mattresses, all kinds of tin and zinc work, etc. There are also factories of biscuits and crackers, chocolates, candies, canned fruits and vegetables, canned tongues and birds, and other alimentary substances. There are likewise factories for the manufacture of chemical products, such as linseed and other vegetable oils, paints, candles, dyestuffs, sulphuric, nitric, muriatic, and other acids, perfumery, soaps, etc. There are tanning establishments all over the country. There is a glass factory here, a paper factory, a powder and dynamite factory, several large boot and shoe factories, several silk, wool, and straw hat factories, factories of hempen shoes (alpargatas), umbrellas, parasols, fans, etc.; of ostrich plumes and other feathers and ornaments; of corsets, shirts, underwear, and white wear generally. Some of these establishments employ from 100 to 500 men and women. All this shows that there is a steady development going on in this country, that it is gradually becoming self-dependent, and that the people more and more are "earning their living" in diversified employments and industries.

RAILWAY DEVELOPMENT.

There has been but little railway building in the Argentine Republic during the past year. The total number of kilometers now in operation is 14,312, an increase of only 137 kilometers over the year 1894. It consists of the prolongation of the Bahia Blanca and Northwestern road and a few branches made by the Western and the Central Argentine roads.

Lines of railroad.—The different groups are :

	Kilometers.	Miles.
Railways the property of the nation.....	1,026	637
Railways guarantied by the nation.....	3,901	2,424
Private railways.....	6,432	3,997
Provincial railways.....	2,953	1,835
Total.....	14,312	8,893

Capital.—The capital invested in all the different lines of railway is \$462,730,641 (gold), distributed as follows:

Railways the property of the nation.....	\$42,394,167
Railways guarantied by the nation.....	108,560,751
Private railways.....	229,027,583
Provincial railways.....	82,748,140
Total.....	462,730,641

Gross receipts.—The gross receipts of all the lines amounted to \$94,493,171 (paper money), as follows:

Railways the property of the nation.....	\$1,825,443
Railways guarantied by the nation.....	15,468,849
Private railways.....	65,348,295
Provincial railways.....	11,850,584
Total.....	94,493,171

Expenses.—The cost of running the railways of the country during 1895 amounted to \$48,332,090 (paper money), as follows:

Railways the property of the nation.....	\$1,612,126
Railways guarantied by the nation.....	11,005,181
Private railways.....	28,372,701
Provincial railways.....	8,332,032
Total.....	*48,332,090

Net earnings.—The net earnings of all the lines amounted to \$46,771,169 (paper money), as follows:

Railways the property of the nation.....	\$296,910
Railways guarantied by the nation.....	5,952,956
Private railways.....	36,975,594
Provincial railways.....	3,545,709
Total.....	*46,771,169

Losses.—The losses sustained by some of the lines during the last year amounted to \$600,088 (paper money), as follows:

Railways the property of the nation.....	\$83,593
Railways guarantied by the nation.....	489,287
Provincial railways.....	27,208
Total.....	600,088

Passengers carried.—The number of passengers carried during the year was 17,188,473, of which 8,076,989 were second class, as follows:

Railways the property of the nation.....	311,189
Railways guarantied by the nation.....	922,689
Private railways.....	14,275,546
Provincial railways.....	1,679,049
Total.....	17,188,473

Cargo transported.—The quantity of cargo transported during the year amounted to 9,364,521 tons, as follows:

	Tons.
Railways the property of the nation.....	323,405
Railways guarantied by the nation.....	1,357,083
Private railways.....	5,434,315
Provincial railways.....	2,249,718
Total.....	9,364,521

* As given in the official returns.

If we reduce the net profits of the railways during the last year, amounting to \$46,771,169 (paper), to gold at 330, which is about the mean rate, the equivalent is \$13,988,200 (gold).

As usual, the Government, during all the past year, has been in trouble with the guarantied roads on account of the excessive amounts they are trying to have the Government pay them. In the straitened condition of the finances of the nation, the Government is not disposed to permit the continuance of the loose way in which the companies have heretofore calculated the amounts of their guaranties.

The work of construction upon a number of railways which are under contract has been suspended for want of funds. This has been especially the case with the Buenos Ayres and Pacific road. It is now completed to Punta de las Vacas, a distance of 142.07 kilometers (88 miles); and the bridge over the Colorado River is in process of construction. The contractors have been expecting some assistance from the Chilean Government for the portion in Chilean territory yet unfinished; but, I believe, at the last moment, the project failed to be approved. As the building of this road is a matter of international interest, I take from the report of the secretary at the last general meeting, held in London on the 19th of December last, the following paragraph, which shows what has been done, what is yet to be done, and the difficulties in the way:

Owing to the lack of funds, it has not been possible to do any new constructive work during the past twelve months, but the rails have been carried on to Punta de las Vacas, the end of the sixth section, between kilometer 142 and 143. Over the greater part of this section trains had been running for some time previously. All that we have been able to do is to complete the section sufficiently for traffic and to improve the work previously done by the substitution of permanent for temporary bridges, and of other changes of a similar character. We had hoped to do more, and to put the sixth section into such a condition as would have justified us in applying to the Government for its formal reception and consequently for the guaranty attached to its kilometric length, but the board's application to the court for permission to carry out this most important work from the funds in the receiver's hands was, to the directors' great regret, unsuccessful, although that application was supported by an enormous majority of the debenture holders. Assents were received from the holders of £316,935 out of the total issue of £346,000; the dissentients only represented £7,215, while the holders of the remaining £21,850 neglected to express any opinion at all. Under these circumstances, the court refused to grant us permission to draw on the funds under its control. Our present position, then, is this: Out of the whole 195 kilometers included in our concession—a total length which may, by the substitution of tunnels for open line, be reduced to about 180—we have constructed about 143 kilometers. Of these 143 kilometers, the first five sections, amounting to 121 kilometers, have been accepted by the Government, the sixth section of 22 kilometers from Rio Blanco to Punta de las Vacas is in use, though it has not been accepted, and there remain about 40 kilometers (25 miles), on which the only work done has been the opening out of portions of the projected tunnels. As you are already aware, our line is not one which can be expected to pay until it has been completed and until the line on the Chilean side of the frontier has also been finished. For this very reason it was constructed under a guaranty—it would never have been commenced at all without a guaranty—and it is the nonpayment of the guaranty from which all our troubles arise. There has been no error in the engineer's surveys; there have been no unexpected difficulties to surmount; there have been no serious accidents to the line such as might not unreasonably have been expected,

considering the nature of the country which we traverse; there have not even been any of those errors in calculation from which many new railways have suffered. Our line has been built and equipped so far within the estimated price per kilometer which was originally accepted by the Argentine Government. Our one difficulty has been that the Government does not fulfill its engagements. To this single cause is it due that we can not raise money to complete the line by the issue of our remaining debentures.

PUBLIC WORKS.

City waterworks.—The limited means at the command of the Government have caused a general suspension of nearly all the public works which are in course of construction by the nation. The water and drainage works of the city of Buenos Ayres have, however, been prosecuted almost to completion; and in nearly all the districts, the houses have made their connections with the street sewers. The President, in his recent message to the Argentine Congress, expresses himself as satisfied with the manner in which this great work has been done. He says:

The entire work, as well the provision for water as the general and domiciliary constructions, have contributed so greatly to improve the hygienic condition of Buenos Ayres that it may, without exaggeration, be said that the capital of the Argentine Republic now figures among the first cities of the world for its system of sanitation, the most modern and most perfect attempted up to the present time.

The quantity of water now consumed in the city is 115,000 cubic meters (4,061,340 cubic feet) per day; and the price is about $2\frac{1}{2}$ cents per cubic meter (35.316 cubic feet).

Buenos Ayres port works.—The port works have gone on slowly, the death of Mr. Madero, the contractor, having, for a time, stopped their prosecution, and the want of an appropriation of money has still further delayed it. The work during the year has been confined to the excavation and the building of the walls and abutments of the fourth dock and the excavation of the north basin. The dock, with the exception of the gates, is now nearly completed, as is also the terraplane surrounding it. Deposits, railway tracks, and hydraulic machinery have also been built or put in position. The canal leading to the deep river has also been somewhat deepened, but the depth of water is still much less than it should be, it being impossible at low tide for large vessels to effect an entrance. The expenditures last year were \$1,351,491 (gold); and arrangements have now been completed by which the work will be prosecuted during the present year without any interruption on account of funds.

Other public projects.—All the other works for the ports of Rosario, Corrientes, Concepcion, etc., must wait till more prosperous times. The National Congress, however, has just voted to build a Congress Hall, which will cost \$4,000,000 or \$5,000,000. Its proportions are very grand, and to judge from the plans of the building, which have been accepted by the Government, it will be a very handsome and imposing edifice. The work on the new Colon Opera House, also being built under the auspices of the

Government, is likewise to be pushed more rapidly than it has been for the last year. It, also, will be a magnificent structure.

INTERIOR CARRYING TRADE.

The interior carrying trade by the great rivers of the country for the year 1894 shows some increase over the returns of the previous year. The following table gives the aggregate number and tonnage of the river vessels, compared with 1893:

Class of vessels.	Arrivals.		Departures.		Total.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.
Sailing vessels	18,660	1,354,584	18,531	1,220,033	39,191	2,574,617
Steamers	7,670	2,939,307	6,276	1,802,797	13,946	4,742,104
Total	26,330	4,293,891	24,807	3,022,830	53,137	7,316,721
Total in 1893	25,078	3,348,559	23,685	2,554,678	48,763	5,903,237

The average tonnage of sailing vessels on the Argentine rivers in 1891 was 31 tons, and of steamers 388 tons; the average tonnage of sailing vessels in 1892 was 53 tons, and of steamers 376 tons; the average tonnage of sailing vessels in 1893 was 66 tons, and of steamers 340 tons.

The Paraná and Uruguay rivers continue to be well supplied with commodious steamers, with good service for passengers. The great monopoly called the Platense Company has failed and gone into liquidation; but several other companies more than take its place and give more reasonable rates.

RIVER COMMERCE.

The river commerce for 1894 amounted to only \$98,252,758 (paper money), compared with \$123,152,620 for the previous year. The following table gives the ports whose shipments of the products of the country exceed \$100,000:

Port.	Value of shipments.	Port.	Value of shipments.
Baradero	\$151,386	Guauguaychú	\$506,129
Barranqueras	202,063	Helvecia	506,845
Bella Vista	412,590	La Paz	1,369,635
Buenos Ayres	1,231,406	La Plata	147,769
Campana	212,728	Paraná	1,573,224
Colon	459,084	Posadas	542,070
Concepcion	1,787,416	Reconquista	193,959
Covendia	401,096	Rosario	5,253,993
Corrientes	395,278	San Lorenzo	313,226
Diamante	598,722	San Nicolas	289,995
Empedrado	178,195	San Pedro	185,552
Esquina	330,398	Santa Fé	4,202,149
Formosa	164,361	Victoria	475,549
Goya	443,927	Villa Constitucion	324,000
Guauguay	1,389,290	Zararé	159,688

The following table gives the quantity and value of the most important articles of national production transported by river and coasting vessels during the year 1894:

Articles.	Quantity.	Value.	Articles.	Quantity.	Value.
Horses.....number...	1,286	\$19,606	Extract of meat.....tons...	56	\$79,166
Hogs.....do.....	3,616	36,160	Macaroni.....do.....	681	136,280
Sheep.....do.....	34,371	103,571	Fruit.....do.....		168,658
Horned cattle.....do.....	4,014	75,910	Biscuits.....tons...	565	50,835
Vegetable oils.....pounds...	1,880,425	164,563	Crackers.....do.....	393	78,643
Bran.....tons.....	15,274	147,092	Flour.....do.....	73,798	1,839,244
Alcohol.....gallons...	794,060	450,892	Soap.....do.....	3,587	538,079
Starch.....tons.....	86	8,647	Wool.....do.....	2,376	416,875
Alpargatas.....dozens...	45,965	81,737	Wood.....do.....		593,946
Canary seed.....tons...	1,698	118,842	Linseed.....tons...	81,341	2,795,095
Honey.....do.....	100	5,030	Corn.....do.....	34,715	661,674
Horns.....do.....	211	12,714	Various woods.....do.....		315,360
Oats.....do.....	262	4,225	Peanuts.....tons...	7,094	354,686
Sugar.....do.....	36,000	5,636,813	Split posts.....do.....		263,129
Lime.....bushels...	1,109,124	296,552	Raisins.....tons...	365	36,517
Charcoal.....do.....	3,082,986	4,624,478	Potatoes.....do.....	4,005	200,227
Preserved meats.....tons...	401	40,150	Beans.....do.....	1,906	114,361
Barley.....do.....	1,768	25,060	Nandubay posts.....number...	480,326	192,132
Cedar.....cubic feet...	1,214,905	1,100,832	Cheese.....tons...	583	175,063
Bone ash.....tons...	535	3,207	Quebracho:		
Rye.....do.....	1,093	14,032	Wood.....do.....		436,060
Hair.....do.....	284	107,957	Chips.....tons...	63,443	634,434
Skins:			Salt.....bushels...	310,690	71,157
Goat.....do.....	115	69,348	Tallow.....tons...	2,747	300,106
Kid.....do.....	114	183,594	Tanned hides.....number...	65,276	391,656
Carpincho.....number...	26,385	14,776	Tobacco.....tons...	5,493	823,933
Sheep.....tons...	1,506	202,600	Jerked beef.....do.....	1,525	163,018
Nutria.....do.....	9	9,784	Wheat.....do.....	792,887	13,245,060
Salted cowhides.....do.....	116	349,944	Wine.....gallons...	530,122	301,006
Sleepers.....number...	9,001	27,003	Yerba mate.....tons...	1,965	275,034
Posts.....do.....	227,305	31,823			

It is proper to mention that this list comprises only shipments of the products of the country by river or coastwise conveyance, and does not include the amounts transported by railway.

TRANSIT TRADE.

The transit trade of the Argentine Republic with Bolivia, Brazil, Chile, Paraguay, and Uruguay is given in the following table:

Country.	From—	To—	Total.
Bolivia.....	\$32,490	\$709	\$33,199
Brazil.....	372,564	817,777	1,190,341
Chile.....	9,773	9	9,782
Paraguay.....	383,495	313,365	696,816
Uruguay.....	6,293,418	1,102,248	7,395,666

The transit to and from Bolivia is effected through the custom-house at Rosario, and consists in minerals and metals from Bolivia destined to Europe

and the merchandise to Bolivia from European ports. The transit to and from Brazil is effected at Monte Caseros; that to and from Paraguay and Uruguay is effected at Buenos Ayres by the usual transshipments.

FOREIGN NAVIGATION.

The following tables showing the arrivals and departures in the foreign carrying trade of the Argentine Republic were compiled from the returns of the national statistical office :

Arrivals and departures of vessels.

Class of vessels.	Arrivals.		Departures.	
	Number.	Tons.	Number.	Tons.
<i>Sailing vessels.</i>				
With cargo.....	3,455	758,924	1,685	770,120
In ballast.....	1,065	323,607	2,392	283,312
<i>Steamers.</i>				
With cargo.....	3,716	3,545,048	4,157	3,858,807
In ballast.....	3,387	2,060,392	3,601	2,065,877
Total.....	11,623	6,687,971	11,835	6,978,116
Total in 1893.....	10,767	6,405,018	10,760	6,433,322

Arrivals and departures for 1894.—The following table shows the arrivals from and departures to each country during the year 1894:

Country.	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
West Indies.....					37	13,795	1	299
Australia.....			1	1,592	11	14,244		
Africa.....	6	4,786			10	6,794		
Germany.....	6	6,267	182	296,987	11	9,541	177	290,507
Belgium.....	3	2,441	82	131,450	14	11,810	140	237,665
Brazil.....	291	158,149	292	208,966	165	46,451	352	265,937
Canada.....	24	20,579	1	1,383				
Chile.....	3	1,561	2	2,000	11	13,681	6	9,078
Spain.....	23	12,656	16	24,715	7	3,862	45	65,642
United States.....	141	108,547	66	90,183	74	52,762	24	37,298
France.....	21	18,897	83	162,285	12	13,298	125	232,152
Italy.....	13	15,819	164	337,103	5	2,306	92	181,272
Norway.....	5	3,228			2	1,588		
Holland.....	1	573	1	1,291	7	5,513	5	8,115
Paraguay.....	259	49,856	1,588	824,341	238	47,122	1,812	855,357
Portugal.....	2	1,336					238	343,660
Great Britain.....	310	253,957	464	778,546	668	553,343	296	492,640
Sweden.....	1	582			1	416		
Uruguay.....	3,399	421,488	4,156	2,737,038	2,793	248,652	4,439	2,900,418
Country not given...	7	1,709	5	7,560	11	8,234	6	4,644
Total.....	4,520	1,082,531	7,103	5,605,440	4,077	1,053,432	7,758	5,924,684

Arrivals and departures according to flag.—The following table shows the arrivals and departures during the year 1894 according to flag :

Flag.	Arrivals.				Departures.			
	Sailing vessels.		Steamers.		Sailing vessels.		Steamers.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
German.....	47	40,444	232	364,077	62	56,486	198	314,121
Austrian.....	13	8,919			13	8,968		
Brazilian.....	61	26,479	202	79,396	29	6,316	186	73,349
Danish.....	30	11,153			30	11,299		
Spanish.....	39	12,382	8	12,713	40	12,458	7	9,608
French.....	10	12,596	119	222,781	5	5,658	104	191,326
Dutch.....	5	2,103			6	2,311		
English.....	596	320,562	771	1,190,996	344	327,893	906	1,384,905
Italian.....	135	95,597	137	270,846	160	110,813	103	194,209
Argentine.....	2,581	279,210	4,047	2,414,432	2,432	256,113	4,517	2,629,176
United States.....	78	57,173			58	44,278		
Norwegian.....	231	162,333	7	5,943	250	162,741	7	4,945
Paraguayan.....	37	1,433	52	4,063	29	1,299	48	3,021
Russian.....	3	2,072			4	3,002		
Swedish.....	26	17,049	1	1,534	19	10,160	1	128
Uruguayan.....	628	32,026	1,525	1,034,884	596	33,637	1,679	1,116,101
Belgian.....			2	3,795			2	3,795
Total	4,520	1,082,531	7,013	5,605,440	4,077	1,053,432	7,758	5,924,684

It will be seen from these tables that in 1894, the arrivals from the United States comprised 141 sailing vessels and 66 steamers, with a total tonnage of 198,730 tons; in 1893, the arrivals from the United States comprised 142 sailing vessels and 42 steamers, with a total tonnage of 155,510 tons; in 1892, the arrivals from the United States were 179 sailing vessels and 20 steamers, with a total tonnage of 145,094 tons; in 1891, the arrivals from the United States were 131 sailing vessels and 8 steamers, with a total tonnage of 102,532 tons. Thus, compared with 1891, the shipping from the United States to the Argentine Republic for 1894 shows an increase of 10 sailing vessels and 58 steamers, with an increased tonnage of 96,198 tons. The increase is noteworthy; but the increase in the steam communication between the United States and the River Plate in four years is quite remarkable. It will be further observed, however, that the number of sailing vessels carrying the American flag was only 78 and that not a single steamer arrived here under the flag of the United States.

ACTUAL OCEAN TONNAGE.

I have heretofore called attention to the manner in which the tables of the foreign navigation of the Argentine Republic are made up. They are misleading in that they are not confined to the actual ocean tonnage, but include all the river craft which sail the La Plata, Paraná, Uruguay, and Paraguay rivers trading with Uruguay and Paraguay, thus swelling the tables of ocean navigation to proportions to which it is not entitled. To

understand clearly the actual seagoing tonnage of the Argentine Republic, the river craft should be eliminated. The following table more accurately shows the situation for 1894:

Craft.	From Uruguay.		From Paraguay.		From ocean ports.	
	No.	Tons.	No.	Tons.	No.	Tons.
Sailing vessels.....	3,399	421,488	259	49,856	863	511,167
Steamers.....	4,156	2,737,038	1,588	824,341	1,359	2,044,069
Total.....	7,555	3,158,526	1,847	874,197	2,222	2,555,256

Separating in this manner, as I have heretofore stated, the foreign ocean navigation of the Argentine Republic from the river navigation—that is to say, leaving out of the tables the river craft, which make regular daily trips between Montevideo, Buenos Ayres, Salta, and Asuncion—and it is revealed to us that the actual, legitimate ocean navigation of the Argentine Republic becomes a much smaller affair than would at first sight appear from the tables of the national statistical office. It amounts to just 863 sailing vessels, with a tonnage of 511,187 tons, and 1,359 steamers, with a tonnage of 2,044,069 tons—not very much larger than the carrying trade with Paraguay, and a third less than that with Uruguay.

This is further illustrated by a glance at the table of arrivals according to flag. It is known that neither the Argentine Republic nor Uruguay nor Paraguay have any vessels engaged in ocean navigation. Their trade is confined solely to the La Plata, Paraná, Uruguay, and Paraguay rivers. So, eliminating those flags from the table, the following is the result:

Craft.	Argentine flag.		Uruguayan flag.		Paraguayan flag.		All other flags.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Sailing vessels.....	2,581	279,210	628	32,026	37	1,433	1,270	769,862
Steamers.....	4,047	2,413,432	1,525	1,034,884	52	4,062	1,389	2,153,066
Total.....	6,628	2,692,642	2,153	1,366,910	89	5,495	2,659	2,912,928

According to this calculation, the actual ocean navigation for 1894 was 2,222 vessels, with a total tonnage of 2,555,256 tons.

FOREIGN COMMERCE.

The foreign commerce of the Argentine Republic for 1894 amounted to \$194,476,611, against \$189,542,664 for 1893, an increase of \$4,933,977. The imports were \$92,788,625, being a decrease of \$3,435,003 compared with the previous year; the exports were \$101,687,986, being an increase of \$8,368,950 over those of 1893.

For the purpose of further comparison, I give the returns of the foreign trade of the Argentine Republic for the last ten years:

Year.	Imports.	Exports.	Total.
1885.....	\$92,221,969	\$83,879,100	\$176,101,069
1886.....	95,408,745	69,834,841	165,243,584
1887.....	117,352,125	84,421,820	202,773,945
1888.....	128,412,110	100,111,903	228,524,013
1889.....	164,569,884	90,145,355	244,715,239
1890.....	142,240,812	100,818,993	243,059,805
1891.....	67,207,780	99,723,211	166,930,991
1892.....	91,481,163	112,767,826	204,248,989
1893.....	96,223,628	94,090,159	190,313,787
1894.....	92,788,625	101,687,986	194,476,611

It will be observed that the course of trade has run very evenly since the great collapse in 1890, with no great increase, however, in the exports.

FOREIGN COMMERCE ACCORDING TO CUSTOM-HOUSE.

The following table, compiled from the returns of the national statistical office, shows the imports, exports, and total commerce of each custom-house in the country for 1894:

Custom-house.	Imports.	Exports.	Total.
Ajo.....	\$165	\$53,099	\$53,264
Alvear.....		24,452	24,452
Bahia Blanca.....	212,726	4,230,921	4,443,647
Baradero.....	31,437		31,437
Barranqueras.....		3,781	3,781
Bella Vista.....	58	18,082	18,140
Buenos Ayres.....	77,814,696	53,350,514	131,165,210
Campana.....	581,319	1,035,439	1,616,758
Colon.....	19,263	829,963	849,226
Concepcion.....	17,205	407,540	424,745
Concordia.....	144,647	3,126,292	3,270,939
Corrientes.....	99,516	52,862	152,378
Diamante.....	480	155,369	155,879
Empedrado.....		2,400	2,400
Esquina.....		87,295	87,295
Formosa.....	3,940	21,080	25,020
Goya.....	15,462	160,441	175,903
Gualeday.....	20,207	222,002	242,209
Gualedaychú.....	40,291	1,037,325	1,077,616
Helvecia.....	4,137	344,150	348,287
Jujuy.....	35,671	227,089	263,660
La Paz.....	28,409	151,280	179,689
La Plata.....	1,807,316	7,305,045	9,112,361
Mendoza.....	6,445	1,194,693	1,201,138
Monte Caseros.....	39,322	205,240	244,569
Paraná.....	174,598	205,608	380,206
Paso de los Libres.....	2,278	237,562	239,840
Patagones.....		164,467	164,467
Oran.....	2,250	3,546	5,796
Rosario.....	10,588,803	19,073,609	29,662,409
Salta.....	32,146	265,022	297,168
Santa Fe.....	362,280	1,365,654	1,727,934
San Lorenzo.....		920,013	920,013

Foreign commerce according to custom-house—Continued.

Custom-house.	Imports.	Exports.	Total.
San Juan.....	\$2,325	\$458,724	\$461,049
San Nicolas.....	77,086	2,232,978	2,310,064
San Pedro.....	5,100	273,637	278,737
San Tomé.....		23,371	23,371
San José.....	49,804	858	50,662
Villa Constitución.....	79,974	814,668	894,642
Victoria.....		249,890	249,890
Zarate.....	489,262	1,151,728	1,640,990
Total.....	92,788,625	101,687,986	194,476,611

It will be seen that the bulk of the imports and exports of the country pass through the custom-houses of Buenos Ayres and Rosario, their imports together amounting to \$88,403,499 and their exports together amounting to \$72,424,120 for the year 1894.

FOREIGN COMMERCE ACCORDING TO COUNTRY.

The following table shows the foreign commerce of the Argentine Republic for 1894, according to country:

Country.	Imports.	Exports.	Total.
Germany.....	\$10,689,487	\$11,544,516	\$22,234,003
West Indies.....	2,547	1,391,318	1,393,865
Belgium.....	8,958,561	12,769,341	21,727,902
Bolivia.....	73,547	385,586	459,133
Brazil.....	1,980,468	13,869,406	15,849,874
Canada.....	31,282		31,282
Chile.....	20,843	1,764,500	1,785,343
Spain.....	1,703,314	2,384,507	4,087,821
United States.....	10,149,018	5,285,210	15,434,228
France.....	10,156,320	18,844,323	29,000,643
Italy.....	8,873,377	3,066,767	11,940,144
Holland.....	102,856	164,173	267,029
Paraguay.....	1,712,615	221,730	1,934,345
Portugal.....	46,286	74,276	120,562
Great Britain.....	33,189,014	20,410,884	53,599,898
Norway and Sweden.....		21,221	21,221
Uruguay.....	2,327,129	4,511,904	6,839,033
Countries not named.....	2,769,961	4,988,034	7,757,995
Total.....	92,788,625	101,687,986	194,476,611

Comparing these returns with those of the previous year, the imports from Great Britain and the United States show an increase, respectively, of about \$500,000; while those from Germany, Belgium, and France, respectively, show a decrease of about the same amount.

In exports from the Argentine Republic, those to Great Britain show an increase of \$2,570,279; to Belgium, \$1,998,178; to the United States, \$1,868,470; to Germany, \$1,168,039; and to France, \$685,346 over the previous year.

With reference to the foregoing tables, Mr. Latzina, the director of the statistical office, states that the imports in many cases do not show the place from which they were originally shipped. For example, he notes that his statistics do not register any importations from Austria, although it is well known that they are quite important. The reason of this is that the Argentine custom-house notes only the port from which the vessel was dispatched, and as Austrian imports do not come from Trieste or Fiume, but are sent here by way of Hamburg, Bremen, Antwerp, or Genoa, it follows that the importation, though proceeding from Austria, goes through the Argentine custom-house disguised as German, Belgian, or Italian. It is the same in regard to importations from Switzerland; they come indirectly and they go to swell the importations from Italy, France, or Belgium.

He also notes, in reference to exports from the Argentine Republic, a similar proceeding. Ships loaded with the produce of the country are usually dispatched "to Falmouth for orders," thus swelling the exports to England; but the cargoes are not discharged there at all, but go thence to the Continent, where they have found a market.

DETAILS OF THE IMPORTS AND EXPORTS FOR 1894.

The quantity and custom-house value of all articles imported into and exported from the Argentine Republic during the year 1894, as published by the national statistical office, are given in the following tables:

Imports in 1894.

Articles.	Quantity.	Official value.
<i>Animals.</i>		
Asses.....number.....	1	\$50.00
Horses and mares.....do.....	251	29,822
Goats.....do.....	2	50
Hogs.....do.....	20	1,154
Sheep.....do.....	7,951	131,865
Mules.....do.....	558	10,044
Cattle.....do.....	214	49,830
Total.....		222,815
<i>Comestibles.</i>		
Olive oil.....kilograms*.....	4,307,640	1,076,823
Olives.....do.....	603,005	83,048
Succory.....do.....	425,267	40,023
Starch.....do.....	292,837	44,333
Rice.....do.....	14,727,442	987,670
Saffron.....do.....	5,949	118,980
Sugar:		
Refined.....do.....	12,061,776	1,206,175
All other classes.....do.....	3,089,734	247,177
Codfish.....do.....	1,043,428	153,416
Cocoa.....do.....	202,166	40,432
Coffee.....do.....	2,528,685	758,639
Cinnamon.....do.....	12,973	3,633
Meats.....do.....	53,622	28,170
Barley.....do.....	252,323	11,930

* 1 kilogram = 2.2046 pounds.

Imports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Comestibles—Continued.</i>		
Chocolate.....kilograms...	40,866	\$24,518
Coca.....do.....	49,276	34,493
Confectionery.....do.....	48,345	35,690
Spices and condiments not otherwise classified.....do.....	924,697	249,139
Farina.....do.....	983,522	49,175
Fecula.....do.....	52,927	11,593
Macaroni.....do.....	16,061	3,213
Fruits:		
Fresh.....		284,940
Dried and canned.....kilograms...	1,732,088	268,355
Flour:		
Wheat.....do.....	139,800	1,104
Other.....do.....	99,855	15,841
Hams.....do.....	83,486	41,743
Sirups and vegetable juice.....		10,356
Vegetables, dried and preserved.....kilograms...	3,543,589	280,600
Maize.....do.....	190,662	3,813
Butter.....do.....	605	302
Lard.....do.....	38,274	11,483
Honey.....do.....	9,773	1,595
Biscuits, crackers, etc.....do.....	17,373	5,214
Figs.....do.....	265,320	40,042
Raisins.....do.....	98,878	19,522
Fish, dried and canned.....do.....	956,067	263,002
Cheese.....do.....	510,819	255,221
Salt.....do.....	460,129	12,266
Sausages.....do.....	88	62
Tea.....do.....	564,418	451,533
Bacon.....do.....	3,114	1,246
Wheat.....do.....	662	26
Vinegar:		
In bottles.....dozens...	1,089	1,089
In casks.....gallons...	8,292	2,196
Verba:		
Paraguayan.....kilograms...	11,682,412	1,243,398
Paranaguá.....do.....	11,906,489	1,388,949
Total.....		9,812,078
<i>Liquors.</i>		
Champagne in bottles.....dozens...	10,368	124,416
Sherry in bottles.....do.....	1,157	13,884
Port in bottles.....do.....	4,237	50,844
Bordeaux in bottles.....do.....	1,773	13,532
Vermouth in bottles.....do.....	33,010	182,556
All other classes in bottles.....do.....	10,571	48,418
Sherry in casks.....gallons...	6,677	12,535
Port in casks.....do.....	22,681	37,927
Vermouth in casks.....do.....	1,116	1,265
All other fine classes in casks.....do.....	4,982	9,428
Wine (common) in casks.....do.....	141,489	5,356,960
Wormwood:		
In bottles.....dozens...	8,914	44,570
In casks.....gallons...	7,085	9,389
Bitters:		
In bottles.....dozens...	80,583	412,240
In casks.....gallons...	309	467
Cafia.....do.....	6,364	2,408
Chartreuse.....dozens...	2,010	32,100

Imports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Liquors—Continued.</i>		
Brandy:		
In bottles.....dozens...	30,081	\$210,567
In casks.....gallons...	16,787	19,081
Gin:		
In bottles.....dozens...	25,286	66,865
In casks.....gallons...	44,832	16,970
Rum:		
In bottles.....dozens...	2,324	16,268
In casks.....gallons...	5,491	6,235
Whisky:		
In bottles.....dozens...	10,169	45,758
In casks.....gallons...	5,367	6,092
Other spirits:		
In bottles.....dozens...	6,873	37,892
In casks.....gallons...	41,671	22,280
Mineral waters, etc., in bottles.....dozens...	73,838	120,423
Cider:		
In bottles.....do.....	1,866	3,732
In casks.....liters...	4,645	465
Beer:		
In bottles.....dozens...	14,532	29,064
In casks.....gallons...	173	66
Total.....gallons		6,953,564
<i>Tobacco.</i>		
Cigars:		
Habana.....kilograms...	8,676	57,426
All other kinds.....do.....	134,935	164,430
Cigarettes, all kinds.....do.....	2,347	4,668
Tobacco leaf:		
Habana.....do.....	5,423	3,857
All other kinds.....do.....	390,231	111,680
Fine cut:		
Leaf Habana.....do.....	553	332
Other kinds.....do.....	2,556	767
Snuff.....do.....	385	462
Total.....		343,622
<i>Spun and woven goods.</i>		
Cotton:		
Raw.....kilograms...	36,119	9,028
Spun.....do.....	769,579	465,339
Tow.....do.....	349,269	52,376
Felt of wool.....do.....	7,710	6,983
Felt for hats.....dozens...	513	3,166
Twine.....kilograms...	95,860	28,756
Sailmakers'.....do.....	255,054	84,716
Binding.....do.....	1,832,452	366,489
For wax matches.....do.....	100,806	50,313
For wool.....do.....	98,935	14,781
For springs.....do.....	91,895	18,379
Thread:		
Common.....dozens...	1,738,392	257,952
Silk.....kilograms...	17,171	240,387
Other kinds.....do.....		109,718
Yarn.....do.....	70,259	137,912
Washed wool.....do.....	4,766	4,766
Flax thread.....do.....	31,186	21,404

Imports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Spun and woven goods—Continued.</i>		
Agave:		
Raw.....kilograms...	1,048,514	\$62,921
Braided.....do.....	36,801	3,680
Raw jute.....do.....	632,639	37,957
Matting.....do.....	89,191	26,751
Ribbon:		
Pure silk.....do.....	5,479	109,365
Other kinds.....do.....	101,591	290,923
Matting of all kinds.....do.....	33,452	11,323
Sackcloth.....do.....	20,517,484	4,103,493
Frieze of all kinds.....do.....	11,087	5,051
Sailcloth.....do.....	1,044,875	590,447
Billiard cloth.....do.....	2,988	14,940
Cotton goods.....do.....	10,681,574	9,112,013
Mixed with wool.....do.....	2,312	3,760
Mixed with wool and silk.....do.....	5,624	22,661
Mixed with silk.....do.....	5,016	22,374
Linen goods.....do.....	494,183	587,408
Mixed with cotton.....do.....	33,369	33,883
Mixed with silk.....do.....	47	243
Woolen goods.....do.....	1,532,868	4,511,933
Mixed with silk.....do.....	11,861	49,837
Mixed with cotton.....do.....	854,288	1,439,943
Silk goods.....do.....	34,248	653,571
Mixed with wool.....do.....	4,554	45,958
Mixed with cotton.....do.....	54,142	461,931
Goods of other kinds.....do.....	41,308	28,839
Impermeable cloth.....do.....	196,765	106,108
Rubber:		
For shoes.....do.....	20,108	45,680
Other kinds.....do.....	5,545	14,684
Shag of all kinds.....do.....	400,827	347,876
Bags:		
Cotton.....do.....	107,584	53,752
Hempen.....do.....	347,222	84,717
Cord:		
Silk.....do.....	315	3,733
Other kinds.....do.....	5,461	17,897
Inserting, edging, etc.....do.....	89,259	425,390
Blankets:		
Woolen.....do.....	2,743	5,181
Other kinds.....do.....	328,597	235,926
Cordage and rigging.....do.....	1,563,856	274,020
Wicking.....do.....	67,857	41,270
Twine.....do.....	120,082	40,626
Soles for alpargata shoes.....do.....	24,832	7,449
Ribbons of all kinds.....do.....	11,491	49,572
Total.....		25,863,828
<i>Ready-made clothing and confections.</i>		
Shirts:		
Men's.....dozens.....	720	9,042
Women's.....do.....	103	1,764
Undershirts:		
Silk.....do.....	164	3,280
Other kinds.....kilograms.....	44,434	162,729
Do.....dozens.....	228	1,076
Drawers:		
Silk.....kilograms.....	17	340
Other classes.....do.....	6,589	24,427

Imports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Ready-made clothing and confections—Continued.</i>		
Cravats of all kinds.....dozens...	521	\$1,938
Collars and cuffs.....do.....	6,278	19,061
Corsets.....do.....	405	3,504
Dressing gowns.....do.....	2,473	11,973
Hats and bonnets.....do.....	371	1,717
Gloves, other than kid.....kilograms...	4,410	19,782
Stockings:		
Silk.....do.....	105	1,680
Other kinds.....do.....	259,947	668,793
Handkerchiefs:		
Silk.....do.....	11,332	226,640
Other kinds.....do.....	275,143	491,842
Parasols and umbrellas.....number...	45,766	25,451
Clothing for external use.....		757,905
Hats:		
Woolen.....dozens...	11,722	59,208
Straw.....do.....	19,173	35,807
Silk.....do.....	100	3,940
Felt.....do.....	2,189	31,936
Other kinds.....do.....	2,338	33,198
Towels.....kilograms...	105,826	221,463
Miscellaneous goods:		
Cotton.....		319,715
Hempen.....		4,940
Linen.....		85,688
Woolen.....		189,175
Mixed.....		126,560
Silk.....		42,592
Other.....		61,549
Total.....		3,650,430
<i>Drugs and chemicals.</i>		
Acid:		
Sulphuric.....kilograms...	216,284	11,669
Muriatic.....do.....	27,321	2,521
Nitric.....do.....	1,198	219
Other kinds.....		86,257
Oil:		
Linseed.....kilograms...	137,251	20,723
Palm.....do.....	204,580	31,132
Other kinds.....		567,189
Tar.....kilograms...	588,908	76,556
White lead.....do.....	105,529	10,552
Alcohol.....gallons...	289	543
Tar.....kilograms...	231,978	11,873
Alum.....do.....	134,360	6,842
Ammonia (liquid).....do.....	38,847	9,709
Indigo.....do.....	7,215	10,822
Sulphur.....do.....	386,180	12,199
Prussian blue.....do.....	7,426	7,426
Varnish.....do.....	137,339	84,386
Benzine.....do.....	65,871	9,883
Blackening.....do.....	73,823	19,929
Bicarbonate of soda.....do.....	569,460	22,779
Borax.....do.....	125,387	23,419
Chlorate of potash.....do.....	48,975	19,589
Chlorate of lime.....do.....	68,158	3,405
Carbonate of magnesia.....do.....	2,355	942
Carbonate of potash.....do.....	38,018	5,930

Imports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Drugs and chemicals—Continued.</i>		
Carbonate of soda.....kilograms...	996,099	\$29,881
Glue.....do.....	106,782	21,065
Fire crockery.....do.....	33,350	13,340
Colors:		
In powder.....do.....	2,018,662	194,920
Prepared.....do.....	1,255,711	132,298
Dextrin.....do.....	9,305	1,397
Specifics for sheep scab.....do.....	2,561,837	640,551
Stearin.....do.....	3,432	1,028
Essences, all kinds.....do.....		74,874
Phosphorus.....kilograms...	8,255	8,255
Gelatin.....do.....	27,792	14,491
Glycerin.....do.....	49,055	12,660
Glucose.....do.....	342,104	27,368
Gums, all kinds.....do.....	185,439	62,644
Iodine of potassium.....do.....	1,534	7,670
Soap:		
Common.....do.....	107,111	25,731
Perfumed.....do.....	23,126	21,187
Malt.....do.....	2,384,618	238,462
Patent medicines.....do.....		297,747
Nitrate of potash.....kilograms...	63,363	10,403
Nitrate of soda.....do.....	39,049	5,858
Perfumery.....do.....		135,147
Peroxide of manganese.....kilograms...	27,566	2,756
Resin.....do.....	4,920,336	147,608
Photographic placas.....dozens...	6,223	7,593
Gunpowder and other explosives.....kilograms...	66,942	22,406
Potash.....do.....	31,854	4,882
Pharmaceutical products.....do.....		228,616
Chemical products.....do.....		211,683
Medicinal substances.....do.....		57,375
Salt:		
Common.....bushels.....	1,134,868	239,929
Rock.....kilograms.....	241,680	3,630
Silicate of soda.....do.....	10,000	300
Calcined soda.....do.....	4,058,469	121,754
Caustic soda.....do.....	422,093	20,984
Sulphate of copper.....do.....	138,587	20,787
Sulphate of iron.....do.....	74,516	1,490
Sulphate of magnesia.....do.....	5,704	570
Sulphate of quinine.....do.....	71	1,420
Sulphate of lime.....do.....	33,675	673
Talc.....do.....	2,465,822	74,571
Ink:		
Printing.....do.....	96,058	16,553
Writing.....do.....	80,428	8,076
Turpentine.....do.....	109	29
Vaseline.....do.....	11,748	5,875
Total.....do.....		4,234,414
<i>Lumber and wooden articles.</i>		
Lumber:		
Pine.....cubic feet.....	8,251,971	4,387,310
Walnut.....do.....	253,722	74,740
Oak.....do.....	23,120	15,241
Cedar.....do.....	207,975	72,623
Quebracho.....do.....	12,113	2,742
Other woods.....do.....	591,754	129,627

Imports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Lumber and wooden articles—Continued.</i>		
Trunks and boxes.....number...	104,823	\$22,479
Carriages and wagons.....do.....	305	21,269
Shooks and casks.....do.....	55,451	129,642
Musical instruments of wood.....do.....		61,258
Launches and boats.....number...	9	523
Furniture.....do.....		117,051
Pianos.....number...	444	92,500
Walking sticks.....dozens...	3,727	11,233
Other wooden articles.....do.....		184,587
Total.....		5,387,532
<i>Paper and paper manufactures.</i>		
Pulp.....kilograms...	30,000	1,900
Paper pulp.....do.....	3,569,246	356,903
Sulphate of alumina.....do.....	358,735	8,270
Old rags.....do.....		367,409
Paper:		
Writing.....kilograms...	815,123	203,773
Drawing.....do.....	9,764	4,880
Printing.....do.....	3,962,793	990,693
Wall.....do.....	225,602	66,305
Wrapping.....do.....	517,491	114,467
Binding.....do.....	47,542	24,532
Cigarette.....do.....	189,209	157,364
Blotting.....do.....	29,630	14,811
Tissue.....do.....	4,229	8,488
Silk.....do.....	44,973	22,483
Cardboard.....do.....	1,876,274	218,630
Card paper.....do.....	16,447	1,905
Albums.....dozens...	544	4,583
Playing cards.....gross...	58	580
Books:		
Blank.....kilograms...	133,332	111,549
Printed.....do.....	412,688	412,688
Music.....do.....	9,015	7,218
Papier-maché.....do.....		82,668
Polygraphic products, etc.....do.....		24,530
Typographic impressions.....kilograms...	148,635	194,185
Various articles of paper.....do.....		166,765
Total.....		3,194,506
<i>Leather and leather manufactures.</i>		
Harness.....do.....		13,341
Boots and shoes:		
Leather.....dozens...	1,721	21,017
Other kinds.....do.....	2,466	18,668
Pocketbooks, cigar cases, etc.....do.....	6,799	30,264
Leather and kid gloves.....kilograms...	2,501	42,257
Skins:		
Undressed.....do.....		9,200
Dressed, with fur on.....do.....		18,293
Tanned.....do.....		364,299
Saddles.....number...	95	991
Sole leather.....kilograms...	83	166
Valises and traveling bags.....number...	1,416	7,594
Other articles of leather.....do.....		124,125
Total.....		650,219

Imports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Iron and its products.</i>		
Steel, unmanufactured..... kilograms...	571,707	\$51,507
Wire:		
For fencing..... do.....	28,991,434	1,443,182
Galvanized..... do.....	5,712,608	341,685
Other classes..... do.....	388,346	26,418
Nails of all kinds..... do.....	364,025	98,645
Carriage springs..... do.....	830,384	158,486
Hoops and tires..... do.....	3,117,587	151,134
Iron:		
Unworked..... do.....	44,445,833	1,674,602
Galvanized..... do.....	18,032,250	1,442,216
Joists, beams, and columns..... do.....	8,873,623	354,577
Screws and nuts..... do.....	724,903	93,930
Rods for umbrellas and parasols..... do.....	2,041	622
Plows..... number ..	21,850	154,824
Corn thrashers..... do.....	3,659	415,767
Scythes..... kilograms...	25,565	12,781
Spades, picks, and shovels..... do.....	319,005	62,547
Rakes:		
Horse..... do.....	1,155	26,365
Hand..... do.....	29,092	16,706
Plowshares..... do.....	109,439	29,782
Harvesters..... number...	9,633	1,567,999
Planters..... do.....	1,216	36,742
Thrashers..... do.....	1,569	1,313,492
Other iron products.....		65,925
Needles of all kinds..... kilograms...	13,038	23,034
Anchors..... do.....	1,340	134
Arms and munitions.....		275,228
Kitchen utensils.....		567,802
Pumps..... number.....	2,516	11,696
Handles..... kilograms...	20,361	4,072
Chains..... do.....	438,619	46,124
Safes..... do.....	39,787	7,956
Iron pipes:		
Galvanized..... do.....	992,752	148,912
Other kinds..... do.....	2,007,992	162,363
Stoves, kitchen ranges, etc..... do.....	44,005	6,598
Iron ornaments.....		331,552
Tools.....		259,895
Machines:		
Sewing..... number...	14,623	231,807
Other.....		519,568
Motors.....		1,014,013
Iron furniture.....		745
Steel pens..... kilograms...	19,616	58,848
Presses:		
Lithographic..... number...	41	3,079
Hay and wool..... do.....	133	26,880
Wine..... do.....	6	535
Other..... kilograms...	44,408	6,877
Wire cloth and gauze..... do.....	160,303	41,418
Other articles of iron and steel.....		614,287
Total.....		14,251,133
<i>Building materials.</i>		
Materials for railways.....		1,439,889
Materials for gas.....		3,077
Materials for electric light.....		70,732

Imports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Building materials—Continued.</i>		
Materials for sugar mills.....		\$72,962
Materials for mining.....		4,626
Materials for meat factories.....		25,975
Materials for dynamite factory.....		12,105
Materials for waterworks.....		2,419
Materials for La Plata port.....		25,300
Materials for tramway.....		169,906
Materials for telephones.....		6,026
Materials for telegraphs.....		80,131
Total.....		1,913,730
<i>Various metals and their products.</i>		
Brass wire..... kilograms...	85,250	14,599
Quicksilver..... do.....	1,745	1,745
Bronze, in powder..... do.....	5,554	8,331
Copper and brass, unworked..... do.....	158,399	63,355
Tin, unworked:		
Plates..... do.....	102,464	51,231
Sheets..... do.....	3,094,696	289,245
Laminated gold..... thousands...	83	3,735
Silver, in bars..... kilograms...	25	400
Lead, unworked..... do.....	820,690	53,569
Zinc, unworked..... do.....	996,693	96,416
Jewelry.....		139,648
Gas hangings, etc.....		80,168
Articles of copper and bronze.....		137,569
Articles of tin and iron.....		1,664
Articles of tin.....		24,178
Metallic bands.....		86,535
Manufactures:		
Lead.....		81,274
Zinc.....		10,330
Other metals.....		127,591
Artistic bronzes.....		60,000
Lead pipes..... kilograms...	2,150	323
Instruments:		
Mathematical, optical, surgical, etc.....		16,248
Musical.....		3,138
Munitions.....		141
Watches:		
Gold..... number...	4,463	125,228
Other kinds..... do.....	29,615	97,666
Clocks..... do.....	29,566	46,282
Weights and measures..... do.....	18,295	29,079
Types for printing..... kilograms...	8,067	4,033
Total.....		1,653,721
<i>Glass and stone ware and ceramic products.</i>		
Cut stone for paving..... tons...	16,413	82,065
Sand..... do.....	127,825	64,665
Hydraulic cement..... kilograms...	163,620	1,657
Kaolin..... do.....	232,761	13,966
Marbles, jaspers, alabaster, etc.:		
Unworked..... cubic feet...	39,271	128,358
Cut..... do.....	5,191	15,434
Mosaics..... kilograms...	425,079	28,446
Stones for lithographing..... do.....	56,788	5,676
Grindstones..... do.....	441,769	14,925

Imports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Glass and stone ware and ceramic products—Continued.</i>		
Precious stones, unset.....		\$6,129
Stone for building.....		109,424
Slate roofing.....		2,869
Yellow earth.....		917
Cement..... kilograms...	24,623,457	295,429
Refractory earth..... do.....	675,099	10,122
Glass and crystal plates..... square feet...	5,942,707	291,739
Glass for flooring..... kilograms...	436,467	39,381
Tiles:		
Common..... thousands...	8,681	161,415
For flagging..... do.....	723	17,461
Bottles and flasks, empty..... dozens...	580,876	174,259
Crystals:		
For spectacles.....		2,852
Ware in general.....		399,484
Spectacles.....		19,118
Lamps in general.....		94,289
Bricks, fire..... thousands...	1,011	20,220
Earthenware, in general.....		304,612
Marbles, etc., worked.....		14,979
Objects of art (terra cotta).....		1,644
Porcelain ware.....		118,739
Roof tiles..... thousands...	503	15,090
Glass for mirrors..... square feet...	171,751	87,696
Total.....		2,542,710
<i>Combustibles.</i>		
Candles:		
Stearin..... kilograms...	141,856	42,555
Other kinds..... do.....	5,968	1,876
Stone coal..... tons...	747,805	7,478,036
Coke..... kilograms...	3,657,122	54,855
Matches:		
Wax..... do.....	7,799	6,629
Wooden.....	1,982	991
Kerosene..... gallons...	6,265,212	1,191,107
Naphtha..... kilograms...	80,017	8,002
Total.....		8,784,051
<i>Miscellaneous articles.</i>		
Articles of fancy.....		320,645
Cases for umbrellas..... dozens...	4,589	13,734
Buttons..... kilograms...	84,928	138,655
Corks..... do.....	191,898	134,329
Sponges..... do.....	6,652	27,308
Wallets and pocketbooks..... dozens...	659	2,231
Gutta-percha articles.....		74,589
Toys.....		125,615
Pencils, in general..... kilograms...	28,972	30,283
Hops..... do.....	66,725	33,362
Church decorations.....		8,137
Gold and silver lace.....		2,581
Straw and straw goods.....		86,096
Rabbit skins..... kilograms...	50,546	102,092
Pichua..... do.....	34,548	27,646
Paintings.....		1,223
Live plants.....		11,787
Leeches..... thousands...	103	1,545
Seeds..... kilograms...	2,440,341	173,272

Imports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Miscellaneous articles—Continued.</i>		
Utensils:		
For apothecaries.....		\$157,657
Office.....		86,605
Various articles, unenumerated.....		1,706,957
Total.....		3,265,749
Ship stores (various articles).....		64,583
Grand total of imports.....		92,788,625

Argentine exports in 1894.

Articles.	Quantity.	Official value.
<i>Animals and animal products.</i>		
Asses.....number.....	9,423	\$94,230
Horses.....do.....	11,362	205,314
Hogs.....do.....	7,797	106,805
Sheep.....do.....	122,218	448,678
Mules.....do.....	14,426	288,530
Cattle.....do.....	220,490	4,540,160
Horns.....kilograms.....	2,597,035	155,823
Frozen sheep carcasses.....tons.....	36,486	1,864,110
Hair.....do.....	2,622	996,468
Skins:		
Goat.....kilograms.....	980,761	588,458
Kid.....do.....	511,903	819,045
Sheep.....tons.....	36,756	4,915,384
Hides:		
Cattle—		
Dry.....number.....	3,954,483	7,045,877
Salted.....do.....	1,187,653	3,553,198
Horse—		
Dry.....do.....	191,847	287,769
Salted.....do.....	315,997	758,393
Wool.....tons.....	161,907	28,948,933
Tongues, salted.....kilograms.....	435,185	87,037
Beef:		
Jerked.....tons.....	42,838	4,564,447
Frozen.....kilograms.....	266,820	12,400
Various meats, frozen.....do.....	833,226	59,645
Total.....		60,519,801
<i>Agricultural products.</i>		
Canary seed.....kilograms.....	1,182,061	829,744
Vetches.....do.....	2,900	145
Oats.....do.....	1,664,855	29,489
Barley.....do.....	673,284	10,041
Rye.....do.....	2,981,644	40,810
Wax.....do.....	22,005	9,451
Fresh fruits.....		15,287
Linseed.....kilograms.....	104,434,849	3,583,459
Maize.....tons.....	54,876	1,046,007
Peanuts.....kilograms.....	102,186	5,109
Honey.....do.....	12,912	2,324
Mustard seed.....do.....	251,027	65,403
Potatoes.....do.....	294,349	14,717

Argentine exports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Agricultural products—Continued.</i>		
Raisins.....kilograms...	36,233	\$3,699
Baled hay.....tons.....	47,618	456,386
Beans.....kilograms.....	248,892	14,933
Turnip seed.....do.....	217,990	13,079
Various seeds.....do.....	155,101	7,754
Tobacco, leaf.....do.....	8,971	1,347
Wheat.....tons.....	1,608,249	27,118,142
Total.....		32,250,256
<i>Industrial products.</i>		
Oil:		
Animal.....kilograms.....	504,185	60,501
Linsced.....do.....	424,558	65,611
Peanut.....do.....	79,088	169,349
Turnip.....do.....	130,282	24,109
Alcohol.....gallons.....	21,393	16,349
Canned birds.....kilograms.....	26,213	2,518
Sugar.....do.....	8,200	1,230
Preserved meats.....do.....	658,068	65,259
Hides:		
Tanned.....number.....	5,636	16,903
Other kinds.....		6,260
Sheep dip.....kilograms.....	198,680	48,170
Extract of meat.....do.....	84,587	134,393
Macaroni.....do.....	7,792	1,558
Biscuits.....do.....	80	7
Glycerin.....do.....	206,826	18,614
Flour:		
Wheat.....tons.....	40,758	1,019,931
Meal.....kilograms.....	718,734	21,562
Soap, common.....do.....	11,726	1,759
Butter.....do.....	19,500	5,850
Pepsin.....do.....	1,050	840
Cheese.....do.....	9,177	2,750
Grease and tallow.....tons.....	25,246	2,809,450
Semola.....kilograms.....	6,252	178
Sole leather.....		90,066
Argentine wine.....gallons.....	4,556	2,794
Total.....		4,417,562
<i>Products of the forest.</i>		
Charcoal.....bushels.....	592,716	313,287
Cedar.....cubic feet.....	1,978	1,780
Beams.....number.....	28,846	77,538
Nandubay posts.....do.....	151,614	19,499
Firewood.....		9,448
Various precious woods.....		13,997
Nandubay split posts.....number.....	235,035	77,747
Scantling.....do.....	33,500	5,192
Nandubay logs.....do.....	71,796	29,970
Quebracho:		
Logs.....cubic feet.....	386,886	219,505
Blocks.....tons.....	74,358	743,582
Total.....		1,511,145
<i>Mineral products.</i>		
Auriferous sand.....kilograms.....	44,050	7,483
Lime:		
Unslacked.....do.....	1,416,120	72,852
Slacked.....bushels.....	3,610	967

Argentine exports in 1894—Continued.

Articles.	Quantity.	Official value.
<i>Mineral products—Continued.</i>		
Copper in bars.....kilograms...	90,257	\$36,103
Tin.....do.....	37,630	18,815
Mineral:		
Copper.....do.....	79,190	21,381
Silver.....do.....	102,019	51,009
Lead.....do.....	308,906	24,713
Lead.....do.....	213,030	21,303
Silver.....do.....	805	15,698
Regulus:		
Gold.....do.....	5	3,100
Silver.....do.....	488	19,520
Salt, common.....bushels...	82,778	18,703
Gypsum.....kilograms...	25,000	250
Total.....		311,993
<i>Products of the chase.</i>		
Skins:		
Carpincho.....number...	38,817	21,737
Nutria.....kilograms...	167,140	167,140
Various.....do.....		93,117
Ostrich feathers.....kilograms...	80,542	96,695
Total.....		380,643
<i>Animal and vegetable residuum.</i>		
Bran.....tons.....	20,975	211,551
Cerine.....do.....	1,170	11,700
Bone ash.....do.....	12,234	73,405
Hoofs and claws.....kilograms...	672,890	30,280
Hide cuttings.....tons.....	1,309	30,716
Guano.....kilograms...	1,532,559	40,042
Bones.....tons.....	42,487	552,331
Linseed fiber.....do.....	445	1,788
Perunias.....kilograms...	612,925	9,193
Rabacilla.....tons.....	2,301	30,854
Dried blood.....do.....	860	43,014
Oil cake.....do.....	6,885	82,614
Sausage casings:		
Salted.....kilograms...	240,931	12,045
Dry.....do.....	88,247	3,530
Total.....		1,144,063
<i>Miscellaneous articles.</i>		
Old iron.....kilograms...	746,339	4,478
Live plants.....do.....		80
Rags.....kilograms...	367,762	3,678
Articles of national production.....		155,185
Articles reexported.....		380,130
Ship stores.....		439,162
Total.....		882,613
Grand total of exports.....		101,687,986

ARGENTINA'S BEST CUSTOMERS.

In the interest of such of our manufacturers and exporters as are seeking an extension of their markets abroad, I give below a résumé of the trade of the more important countries having commercial relations with the Argentine

Republic, or, at least, those with which we will have to come into competition.

Trade with Germany.—The trade of the Argentine Republic with Germany has had a wonderful development within very recent years. Since 1880 (fifteen years) the following figures show the increase :

Year.	Imports.	Exports.	Total
1880.....	\$2,365,152	\$2,541,828	\$4,906,980
1894.....	10,689,487	11,544,516	22,234,003

In 1880, the total trade with Germany was 4.7 per cent of the whole ; in 1894, it was 11.5 per cent. Do our merchants wish to know how this has been accomplished? It has been by means of steam communication, by having their own business houses here in the River Plate, and by having their own banking facilities.

The principal items of importation from Germany in 1894 were :

Articles.	Value.	Articles.	Value.
Rice.....	\$411,516	Pianos.....	\$63,800
Refined sugar.....	365,129	Furniture.....	114,885
Codfish.....	121,591	Paper :	
Textile goods.....	3,008,493	Printing.....	615,013
Stockings.....	269,154	Other.....	477,127
Handkerchiefs.....	153,874	Wire fencing.....	387,759
Ready-made clothing.....	528,852	Galvanized iron.....	128,453
Sewing machines.....	124,015	Glass and crystal ware.....	291,420
Other machinery.....	200,404	Various articles.....	3,014,607
Toys.....	151,645	Total.....	10,689,487
Oils, drugs, and paints.....	250,850		

In the list of imports, were 7,778 sewing machines, 306 pianos, and 580 tons of paints.

The exports to Germany in 1894 were :

Articles.	Value.	Articles.	Value.
Linseed.....	\$276,338	Grease and tallow.....	\$68,420
Wheat.....	1,259,285	Minerals, etc.....	141,170
Sheepskins.....	119,958	Nutria skins.....	108,031
Hides :		Hair.....	46,850
Dry.....	419,184	Other items.....	222,598
Salted.....	878,350	Total.....	11,544,516
Horse.....	970,741		
Wool.....	7,039,583		

The quantity of wool shipped was 39,137 tons ; of wheat, 75,021 tons ; of linseed, 8,149 tons ; and of tallow, 623 tons.

Trade with Belgium.—The trade of the Argentine Republic with Belgium shows an almost equal expansion in the matter of imports with that of Germany, as will be seen by the following figures:

Year.	Imports.	Exports.	Total.
1880.....	\$2,483,105	\$14,356,458	\$16,839,563
1894.....	8,958,561	12,769,341	21,727,902

Belgium, however, has not held her own in the matter of percentage. In 1880, her total trade with this country amounted to 16 per cent of the whole; in 1894, it amounted to only 11 per cent, owing to the fact that she has lost a large proportion of the Argentine wool trade. The imports from Belgium in 1894 were:

Articles.	Value.	Articles.	Value.
Textile goods.....	\$1,592,579	Cutlery.....	\$78,926
Printing and other paper.....	722,449	Kitchen utensils, etc.....	166,143
Wire:		Tools.....	65,680
For fencing.....	921,756	Screws, nuts, bolts, etc.....	170,794
Galvanized.....	141,435	Iron joists and beams.....	295,280
Arms.....	194,152	Various articles.....	2,887,359
Iron, unworked.....	913,456	Total.....	8,958,561
Crystal, glass, and stone ware.....	808,412		

The joists and beams amounted to 7,382 tons and the wire for fencing to 16,729 tons.

The exports to Belgium in 1894 were:

Articles.	Value.	Articles.	Value.
Extract of meat.....	\$134,393	Mustard seed.....	\$27,594
Flour.....	37,060	Linseed.....	538,399
Hair.....	262,612	Maize.....	95,180
Hides:		Wheat.....	3,993,853
Dry.....	347,870	Grease and tallow.....	68,327
Salted.....	1,162,726	Quebracho chips.....	26,833
Tanned.....	32,760	Sheepskins.....	52,282
Wool.....	5,637,112	Various articles.....	117,771
Salted tongues.....	86,087	Total.....	12,769,341
Canary seed.....	48,382		

The shipments of wool amounted to 30,918 tons; of wheat, to 235,634 tons; of linseed, to 15,632 tons; and of maize, to 4,904 tons.

Trade with Brazil.—The trade of the Argentine Republic with Brazil is remarkable in that, while the imports from that country are quite insignificant, the expansion of the exports from the River Plate during the last few years shows that the Argentines have found a market for their surplus

products at their very doors. I make the following comparison of the trade now with that of fifteen years ago:

Year.	Imports.	Exports.	Total.
1880.....	\$2,410,221	\$1,986,980	\$4,397,201
1894.....	1,980,468	13,869,406	15,849,874

Thus, while the imports into this country from Brazil have actually and relatively diminished, the exports to Brazil in the last fifteen years have increased from 3 per cent to 13.7 per cent of the entire exports of the Argentine Republic. The imports in 1894 were:

Articles.	Value.	Articles.	Value.
Cacao.....	\$11,094	Dimension stones.....	\$23,594
Coffee.....	651,723	Fruit.....	7,605
Farina.....	7,234	Other articles.....	87,239
Yerba mate (Paranaguay).....	1,111,455	Total.....	1,980,468
Sugar, crude.....	11,370		
Tobacco.....	79,244		

The exports to Brazil for the year 1894 were as follows:

Articles.	Value.	Articles.	Value.
Horses.....	\$70,120	Wheat.....	\$7,992,099
Hogs.....	106,405	Flour.....	815,116
Sheep.....	37,278	Butter.....	5,006
Horned cattle.....	801,200	Timber.....	17,485
Jerked beef.....	2,387,983	Beans.....	12,324
Linseed.....	277,007	Other articles.....	340,559
Corn.....	632,298	Total.....	13,869,406
Potatoes.....	8,525		
Baled hay.....	365,771		

The cattle shipped amounted to 40,006; jerked beef, 22,271 tons; linseed, 7,958 tons; wheat, 475,113 tons; flour, 32,582 tons; baled hay, 39,425 tons; beans, 205 tons; and potatoes, 170 tons.

Trade with Great Britain.—The trade of the Argentine Republic with Great Britain has shown fluctuations during the last fifteen years; but with all this, it still, by long odds, maintains the first place, both in imports into and exports from this country. The following are the figures:

Year.	Imports.	Exports.	Total.
1880.....	\$12,506,924	\$5,341,034	\$17,847,958
1889.....	57,819,516	19,299,095	77,118,611
1894.....	33,189,014	20,410,884	53,599,898

Great Britain, for 1894, has 35.7 per cent of the import trade, 20 per cent of the export trade, and 27.6 per cent of the entire trade.

The following are the imports from Great Britain in 1894:

Articles.	Value.	Articles.	Value.
Sheep for breeding.....	\$106,570	Cognac	\$58,940
Cattle for breeding.....	41,880	Whisky	41,017
Rice.....	66,760	Thread, cotton.....	131,747
Sugar.....	106,044	Binding twine.....	111,328
Hams.....	38,830	Thread, in corrots.....	250,008
Tea.....	386,694	Sailcloth.....	255,238
Cotton goods.....	5,860,397	Oil, varnish, paints, etc.....	436,004
Linen goods.....	123,313	Specific for scab.....	484,976
Woolen goods.....	2,006,408	Printing and other paper.....	204,881
Mixed woolen and cotton goods.....	923,722	Galvanized iron.....	684,421
Shag.....	318,642	Thrashing machines.....	1,242,509
Stockings.....	212,746	Iron pipes.....	296,600
Handkerchiefs.....	281,295	Cutlery.....	128,131
Cordage and tackle.....	199,520	Steam motors.....	705,361
Cotton bags.....	45,617	Railway materials.....	1,357,435
Knit goods.....	164,509	Coal.....	7,099,637
Tin, unworked.....	239,335	Copper and brass, worked.....	73,152
Stoneware.....	131,057	Steel pens.....	46,515
Hydraulic cement.....	125,026	Iron hoops.....	107,735
Domestic utensils.....	80,853	Materials for tramways.....	54,306
Tools.....	150,421	Other articles.....	7,592,153
Iron, unworked.....	684,421	Total	33,719,269

The quantity of rice imported was 3,220 tons; tea, 483 tons; hydraulic cement, 10,418 tons; stone coal, 709,995 tons; iron, unworked, 18,611 tons; and galvanized iron, 15,522 tons. The number of thrashing machines was 1,124.

The exports to Great Britain in 1894 comprised the following items:

Articles.	Value.	Articles.	Value.
Sheep for market.....	\$253,798	Turnip seed.....	\$9,649
Cows for market.....	175,720	Wheat.....	11,603,035
Frozen mutton carcasses.....	1,788,943	Linseed oil.....	60,927
Hair.....	61,636	Preserved meat.....	31,914
Skins:		Flour.....	16,202
Goat.....	115,738	Grease and tallow.....	507,446
Sheep.....	370,987	Quebracho:	
Salted cowhides.....	573,723	Wood.....	180,080
Wool.....	545,718	Chips.....	618,195
Preserved tongues.....	115,392	Minerals.....	27,642
Linseed.....	2,149,950	Bones.....	370,769
Maize.....	181,572	Other items.....	1,178,378
Baled hay.....	73,770	Total	20,410,884

The number of live sheep exported was 66,936, and of cattle, 7,429. The frozen sheep amounted to 34,853 tons; frozen beef, 1,083 tons; linseed, 62,828 tons; maize, 9,436 tons; wheat, 687,378 tons; linseed oil, 393 tons; grease and tallow, 4,511 tons; and baled hay, 6,436 tons.

Trade with France.—The trade of France with the Argentine Republic has exhibited many ups and downs in the last fifteen years. It began to show signs of a grand increase in 1880, and, at the time of the crisis in 1890,

the imports had reached more than \$30,000,000, while the exports to that country amounted to \$38,000,000. Then came the collapse; and the next year, the imports of France did not reach \$8,000,000, the exports to that country amounting to \$24,000,000. There has been but little recovery since, the total trade now amounting to about 15 per cent of the whole. This is seen in the following figures:

Year.	Imports.	Exports.	Total.
1880.....	\$8,292,872	\$16,103,202	\$24,396,104
1889.....	30,237,407	38,264,414	68,501,821
1894.....	10,156,320	18,844,323	29,000,643

The imports of France last year amounted to 10.9 per cent of the whole. The explanation of this decrease is that, now that the Argentine Republic is suffering from the effects of a financial crisis, the articles of luxury and fashion, which made up a great part of its trade, are dispensed with. The imports from France during 1894 were:

Articles.	Value.	Articles.	Value.
Olive oil.....	\$91,515	Books.....	\$138,163
Refined sugar.....	746,503	Tanned skins and hides.....	259,611
Coffee.....	57,030	Watches.....	166,072
Cheese.....	76,268	Jewelry.....	108,553
Wines.....	1,561,202	Tiles.....	157,152
Brandy.....	130,326	Fancy articles.....	161,611
Bitters.....	320,535	Buttons.....	46,000
Textiles (linen, cotton, and woolen).....	2,248,854	Other articles.....	2,418,743
Silks.....	795,199	Total.....	10,156,320
Ready-made clothing.....	242,639		
Paints, perfumery, and medicines.....	229,784		

The exports to France in 1894 were:

Articles.	Value.	Articles.	Value.
Sheep.....	\$69,338	Linseed.....	\$205,222
Skins:		Wheat.....	519,808
Kid.....	561,133	Grease and tallow.....	315,527
Sheep.....	3,114,945	Quebracho and other woods.....	37,644
Hides:		Mustard seed.....	13,500
Dry.....	162,962	Ostrich feathers.....	27,198
Salted.....	407,406	Other articles.....	541,541
Wool.....	12,719,883	Total.....	18,844,323
Maize.....	73,055		
Frozen mutton.....	75,167		

The shipments of kid skins amounted to 351 tons; sheepskins, 22,264 tons; wool, 71,013 tons; linseed, 5,911 tons; wheat, 30,979 tons.

It might be in order also to refer to the Argentine trade with other countries; but those I have mentioned are the ones which more especially come into competition, in the matter of imports, with the United States.

TRADE WITH THE UNITED STATES.

The trade of the Argentine Republic with the United States for 1894 shows some increase both in imports and exports over the preceding year. The imports amounted to \$10,149,018, against \$9,619,327 in 1893, and the exports to \$5,285,210, against \$3,416,740, the total trade being \$15,434,228, against \$13,086,067 for the previous year. In 1894, the imports from the United States were 10.9 per cent and the exports 5.2 per cent of the whole. As a matter for reference, I give the course of trade of the United States for the last ten years:

Year.	Imports.	Exports.	Total.
1885.....	\$7,006,719	\$5,563,841	\$12,570,560
1886.....	7,673,224	3,580,406	11,253,690
1887.....	11,004,553	5,938,808	16,943,361
1888.....	9,909,895	6,665,520	16,575,415
1889.....	16,801,750	7,726,691	24,528,441
1890.....	9,301,541	6,066,958	15,368,499
1891.....	3,445,901	4,214,502	7,660,406
1892.....	7,376,583	4,831,454	12,208,037
1893.....	9,619,327	3,416,740	13,086,067
1894.....	10,149,018	5,285,210	15,434,228

It will be seen that the highest figures our trade with this country ever reached were in 1889—the days of the big Argentine “boom”—and that from the depression which followed the collapse they are now once more recovering their proportions.

Imperfect classification of imports.—In regard to the imports from the United States, I regret to say that in many particulars, as I have pointed out in former reports, the tables of articles which make up the trade, as prepared by the Argentine national statistical office, are unsatisfactory. Instead of detailing *in extenso* the various lines of manufactured goods, the official returns merely mention them as “other articles,” thus leaving conjecture to determine what they are. The following is the table of imports from the United States, as published by the Government.

Imports from the United States.

Articles.	Quantity.	Value.
Sackcloth.....kilograms...	224,459	\$44,892
Cotton goods.....do.....	143,241	115,300
Binding twine.....tons.....	1,490	298,069
Cotton duck.....kilograms...	328,874	232,684
Oils of various kinds.....		288,532
Turpentine.....tons.....	499	69,912
Patent medicines.....		56,975
Empty casks and shooks.....number ..	17,732	50,275
Furniture.....		38,649
Lumber :		
Pine and spruce.....cubic feet...	7,633,099	4,507,804
Various other kinds.....do.....	127,384	51,925
Books and printed sheets.....kilograms...	50,129	50,129

Imports from the United States—Continued.

Articles.	Quantity.	Value.
House and kitchen utensils.....	number.....	\$29,476
Sewing machines.....	number.....	5,173
Various machinery.....	.....	78,426
Steam motors.....	.....	84,381
Plows.....	number.....	63,394
Separators.....	do.....	24,116
Spades, picks, and shovels.....	.....	3,607
Thrashing machines.....	kilograms.....	407,468
Iron tools.....	number.....	46,321
Iron utensils.....	.....	88,177
Iron manufactures.....	.....	54,463
Stone coal.....	tons.....	62,430
Kerosene.....	gallons.....	105,661
Other articles.....	.....	20,977
Total.....	.....	209,769
		1,075,004
		1,969,977
		10,149,018

Exports to the United States.

Articles.	Quantity.	Value.
Horns.....	kilograms.....	19,518
Hair.....	tons.....	626
Skins:		
Goat.....	do.....	715
Kid.....	kilograms.....	435
Sheep.....	tons.....	1,058
Cowhides:		
Dry.....	number.....	1,687,411
Salted.....	do.....	570
Wool.....	tons.....	6,129
Wax.....	kilograms.....	500
Preserved meat.....	do.....	588
Flour.....	tons.....	339
Cabinet woods.....		53
Skins:		
Carpincho.....	number.....	25,941
Nutria.....	kilograms.....	19,886
Various.....		11,365
Ostrich feathers.....	kilograms.....	22,501
Hide cuttings.....	tons.....	193
Guano.....	kilograms.....	50,150
Bones.....	tons.....	5,933
Do.....	kilograms.....	25,564
Dried blood.....	tons.....	36
Sausage casings:		
Salted.....	kilograms.....	31,716
Dry.....	do.....	1,800
Rags.....	do.....	62,000
Other articles.....		5,177
Total.....		5,285,210

Comparisons impracticable.—From the manner in which the table of imports is made up, it is quite impossible for me, with reference to a number of important articles of trade, to make any comparisons with the returns of former years. Everything is “bunched” under the convenient labor-saving line

of "other articles." In some few items, however, I give the imports for the last four years, as far as I am able :

Articles.	1891.	1892.	1893.	1894.
Turpentine.....tons...	233	251		499
Lumber.....cubic feet...	21,235,404	6,284,517	7,593,328	8,251,971
Duck.....kilograms*	32,517	170,803		328,874
Binding twine.....do.....	444,126	1,716,455	2,270,902	1,490,000
Plows.....number...	8,683	27,834	11,450	14,116
Kerosene.....galions...	2,104,589	2,458,322	3,942,182	5,758,032
Cotton goods.....kilograms...	27,953	119,391	212,279	143,241

*1 kilogram 2.2046 pounds.

I regret, owing to the lack of classification, that I can not follow this comparison further. One article, however, which the Argentine statistics insist on giving the United States credit for is "stone coal." In 1893, the imports of this article from the United States were reported to be 18,712 tons; in 1894, they are reported at 20,977 tons. It is notorious that not a single pound of the article was imported from the United States in those years. And this, I have to say, is an illustration of the unreliability of the trade returns. The newspapers here have called public attention to this defect of the statistics; and the director replies, in reference to his habit of lumping different lines of goods under the term "various articles," by explaining that "exactness in commercial nomenclature is not easy, since, if it is too limited, it does not indicate that portion of the statistics most important to be known; and if it is excessively detailed, it requires a very large force for the compilation." What commercial secrets are involved in the \$1,969,977 worth of "other articles" which, in 1894, were imported from the United States, I am not able to reveal.

Exports to the United States.—The exports to the United States being, in great part, raw materials, are more intelligently classified, and they show an increase in value of \$1,868,470 over the previous year, the value of the exports of dry hides alone being equal to that of the entire exports in 1893. The following is a comparative table of the principal shipments during the last four years:

Articles.	1891.	1892.	1893.	1894.
Ox and cow hides.....	\$1,455,848	\$2,540,679	\$1,770,876	\$3,216,708
Wool.....	1,618,722	1,538,313	906,227	1,076,906
Hair.....	140,700	189,211	133,013	237,872
Goatskins.....	296,085	188,394	296,850	428,912
Ostrich feathers.....	13,596	30,055	25,944	27,501
Bones.....	55,486	137,605	169,620	17,132

The remarkable spurt which the returns indicate in the shipment of dry ox and cow hides is owing to the great "leather trust," recently organized in the United States, which, to keep control of the market here and at home, buys up everything in the line that offers. In 1891, the number of dry hides

shipped to the United States from this market was 877,723; in 1892, 1,133,948; in 1893, 894,668; in 1894, 1,687,411.

Argentine wool shipments.—In the matter of wool, there was some increase in the shipments to the United States in 1894 compared with the previous year, and a much greater increase for 1895; but they do not show such an increase as many supposed there would be with the repeal of our duties on that article. Of course, as the repeal was not effected until August, 1894, the full effect of a free market in the United States may not have had time to be appreciated here, and it may be that the future will show a great increase in the exports of Argentine wool to the United States. As I remarked, however, in my last annual report, I fear that the present wools of this country are not generally of the class for which there is the greatest demand with us. The wools for which our manufacturers have in the past depended on foreign markets for their supplies have been the merino clothing wools, which have for years run so evenly and so uniformly in Australia. A few years ago, the Argentine Republic was able to furnish the same grade, bating burr and an excess of grease and dirt; but, with the development of the frozen-mutton trade, which demanded large-bodied animals, the Rambouillet and Negretti flocks have been crossed with the Lincolns, and the result of the cross is a wool which does not run evenly, and which, while it can be used to great advantage in yarns and knit goods, has to be assorted to be of much use as a clothing wool. But the great trouble with Argentine wool, even of the kinds most in demand with us, is the quantity of burr that it carries, which, in many cases, requires a voyage to Antwerp, where there is special machinery for removing it. In 1891, the quantity of wool exported to the United States was 5,781 tons; in 1892, 5,226 tons; in 1893, 4,445 tons; and in 1894, 6,129 tons.

The official returns for 1895 have not yet been published; but, for the first three quarters, the general exports of wool, as I have already stated, amounted to 148,287 tons, with enough unshipped to run the amount fully up to 160,000 tons. Of this quantity, according to the invoices declared at this consulate and that of Rosario, the shipments sent forward from the Argentine Republic to the United States from January 1 to December 31, 1895, were as follows:

	Bales.
Wool from Rosario.....	12,214
Wool from Buenos Ayres.....	18,307
Total.....	30,521

Assuming that each bale weighs 450 kilograms (992.07 pounds), the weight of the shipments to the United States in 1895 was 30,278,968 pounds—a very handsome increase over the previous year, which, allowing two-thirds for dirt, grease, and burr, leaves 10,000,000 pounds of clean wool.

Outlook for American trade.—In my annual reports, I have so often and so fully discussed the conditions of American trade with the Argentine Republic, explaining the ways in which it is handicapped and giving the

reasons why the great bulk of the commerce of the River Plate is with the nations of Europe, that it would be only surplusage to go over the subject again at this time. We are still, in great part, lacking in the facilities necessary to any great increase in our trade with this country. We lack banking facilities with the Argentine Republic, and, above all things, we lack business houses in Buenos Ayres. There are several sample houses here which receive orders for goods to be shipped from the United States, and, in their way, they manage to secure some business; but there is not a distinctively American importing house in this city. The trade we have with this country is done through foreign houses—English and German—and they buy certain lines of our manufactures not because they are at all interested in extending American trade, but because they find a sale for them and “need them in their business.” Other things being equal, they would not buy a dollar’s worth from the United States, but would deal exclusively with the manufacturers of their own nationality. There is little or no hope for any great American trade with the Argentine Republic under these circumstances. So long as our manufactures—better in very many respects than those in the same lines which are shipped here from Europe—are dependent for their market here upon the caprice or the personal interests of English or German importers, their importation into the River Plate can not be regarded as being on a very firm foundation.

Steamship communication.—There is one thing, however, which, during the last year, has been working greatly in our favor, and that is regular and frequent direct intercommunication by means of steamships. There has been steam service between New York and the River Plate by at least three different lines, all, to be sure, under a foreign flag; but they have been of incalculable assistance in our trade with this country. These are the Norton Line, the Prince Line, and the Lamport & Holt Line, with good accommodations, especially the latter, for a few first-class passengers. Their arrivals at each end of the route are watched with especial interest by those who are engaged in the South American trade; and, though without the aid of subsidies, they have done so well during the past year that we may now, I trust, look upon them as regular and permanent adjuncts to our commercial relations with the Argentine Republic.

BUSINESS PROSPECTS.

I have already incidentally referred to the improved conditions under which the business of the new year starts off. The after effects of the late crisis are still visible on all sides, and confidence has not yet fully recovered from the disastrous commercial cyclone which overwhelmed it; but there is everywhere a better feeling among business men, and especially importers. They not only believe that the worst is over, but that the prospects of the country are full of encouragement, while increased production, increased immigration, the extension of new cattle and sheep estancias on the frontiers, the planting of new industries, more satisfactory returns from the railway companies, a greater movement in real estate, and an increasing

disposition to give credits, are all signs, in their way, that things here have once more taken a favorable turn. I know how cautious our American manufacturers and shippers are in reference to the trade of this part of the world and how difficult it is for them to do any great business, for the reason that, generally, they sell for cash, when the bill of lading is signed. There is no doubt that this course saves them from many losses; but, in the absence of their own establishments here, it would appear that they might arrange with well-accredited houses to do business for them. And, in the case of direct purchases, I suggest that, not infrequently, they would better their own interests by giving the usual accommodation which the manufacturers of the countries of Europe allow; not indiscriminate credit—for that would be bad policy—but something less than cash to such houses as are well recommended.

TRADE RETURNS FOR 1895.

The Argentine trade returns for the first nine months of 1895 have been published since I commenced this report, and, as a matter of interest, I give them as a supplement to the foregoing figures. While the imports show a decrease, compared with the first three quarters of last year, there is a very gratifying increase in the exports—gratifying as showing increased production in the country. The following is the comparison:

Imports and exports.	1894.	1895.
Imports for nine months.....	\$73,199,075	\$71,763,749
Exports for nine months.....	80,740,644	93,299,100
Total.....	153,939,719	165,063,349

The following table gives the imports and exports of each country trading with the Argentine Republic for the first three quarters of 1895, omitting the imports and exports of gold, which are included in the preceding table:

Countries.	Imports.	Exports.
Germany.....	\$7,573,615	\$10,216,649
West Indies.....	82,399	1,273,726
Belgium.....	5,462,013	12,861,330
Bolivia.....	52,079	476,518
Brazil.....	3,223,538	9,692,426
Chile.....	39,570	2,317,169
Spain.....	1,853,586	959,917
United States.....	4,795,092	7,338,083
France.....	6,910,330	13,705,927
Italy.....	7,288,280	2,446,301
Holland.....	86,611	75,132
Paraguay.....	1,388,299	74,417
Portugal.....	35,745	3,704,201
Great Britain.....	27,918,678	20,597,115
Sweden and Norway.....		44,700
Uruguay.....	469,461	2,758,033
Countries not named.....	983,525	4,777,500
Total.....	66,162,781	93,209,624

Imports for nine months of 1895.—The amount of imports in each line of trade for the first three quarters of 1895, compared with the same period of 1894, is given in the following table:

Articles.	1894.	1895.
Live stock.....	\$175,931	\$288,782
Alimentary articles.....	7,807,931	8,899,395
Liquors:		
Wines.....	4,348,104	5,371,545
Alcoholic liquors.....	709,955	1,061,017
Beer, ale, etc.....	96,796	147,415
Tobacco.....	295,159	1,071,486
Textiles:		
Thread, yarn, twine, etc.....	1,391,251	1,154,299
Textile fabrics, goods, etc.....	17,829,350	20,700,473
Manufactured articles and clothing.....	1,027,531	801,753
Ready-made white goods.....	2,912,088	2,486,051
Drugs and chemicals.....	2,892,610	3,467,513
Lumber and its applications.....	3,515,740	2,888,843
Paper and its applications.....	2,326,569	1,672,848
Leather and its applications.....	518,695	467,443
Iron and its manufactures.....	10,168,114	7,164,546
Railway and other building materials.....	1,529,846	1,330,532
Various metals and their manufactures.....	1,260,911	949,914
Glass and stone ware, etc.....	2,170,403	1,662,147
Combustibles, kerosene, etc.....	6,903,625	4,976,409
Various manufactured articles.....	2,210,213	1,590,505
Total.....	70,090,816	68,162,781

Exports for nine months of 1895.—The following table gives the exports in each branch of industry for the first three quarters of 1895, compared with the same period of 1894:

Articles.	1894.	1895.
Live stock.....	\$4,399,345	\$6,655,551
Pastoral products.....	40,270,427	43,410,480
Agricultural products.....	29,812,380	35,128,578
Industrial products.....	3,439,323	5,057,784
Forest products.....	982,935	1,603,203
Mineral products.....	243,019	251,134
Products of the chase.....	293,966	133,797
Animal and vegetable sundries.....	764,159	835,209
Various articles.....	367,516	144,088
Total.....	80,573,070	93,029,624

These tables speak well for the last year's trade of the country. The imports, albeit they show considerable increase in liquors and food products, give a total decrease of nearly \$2,000,000 compared with the returns of the preceding year; and the exports—as a proof of the industrial development of the country—exhibit an increase of nearly \$13,000,000. Year by year the agricultural exports show a steady increase, and they will soon overtake the pastoral exports.

THE GOLD PREMIUM.

The premium on gold, unfortunately for the business of the country, continues at a very high figure. It has, however, during the past year, run pretty evenly, without any of the great fluctuations which we have seen in former years, and the tendency has been toward lower rates. On the 1st of January, 1895, the gold value of the Argentine paper dollar was 27 cents; on the 31st of December, it was 30 cents. I give, in the following table, the average highest and lowest value in paper currency of \$100 in Argentine gold since the beginning of the last year (1895):

Month.	Highest.	Lowest.	Month.	Highest.	Lowest.
January.....	363.5	349	July.....	353.5	340
February.....	362.5	344	August.....	339.5	332
March.....	356	347	September.....	332	311
April.....	377	351	October.....	335	318
May.....	379.5	347	November.....	340	329
June.....	359.5	337	December.....	336	328

The highest, lowest, and average quotations of \$100 in Argentine gold in the eleven years that have elapsed since the suspension of specie payments are given in the following table:

Year.	Highest.	Lowest.	Average.	Year.	Highest.	Lowest.	Average.
1885.....	\$165	\$113	\$137	1891.....	\$461	\$301	\$373
1886.....	160	110	139	1892.....	389	265	329
1887.....	153	120	135	1893.....	362	290	324
1888.....	160	137	148	1894.....	371	353	355
1889.....	242	148	180	1895.....	353	336	344
1890.....	326	211	257				

FOREIGN EXCHANGE.

The highest rate of exchange on England at ninety days' sight during the year 1895 was 48¾d.; the lowest, 47½d. The highest rate of exchange on France at ninety days' sight during the same time was 5.13 francs; the lowest, 5.3 francs. On the United States, exchange has been about par.

ARGENTINE FINANCES.

The financial condition of the nation does not appear to have improved during the year just ended. The Government is still entangled in the meshes of a public debt whose magnitude, as long ago as 1890, had assumed such proportions that the revenues were not sufficient to meet the service of the interest, and, at the same time, pay the current expenses of the nation. At first, the Government agreed with its creditors for a three years' moratorium, whereby the interest was to be paid in bonds, and at the end of the term, the service was to be resumed in gold from a reserve fund which meanwhile was to accumulate in the treasury. But the reserve fund did not accumulate; and, in 1893, a new arrangement was made, by which a certain pro-

portion of the interest was to be paid until 1901, when the service was to be resumed in full. The Government is now struggling to live up to this contract, and, but for one thing, it would have no difficulty in doing so. Unfortunately, the National Congress is not economically inclined, and, besides the regular budget, it annually votes many millions of dollars for different objects outside of the ordinary expenses, to meet which there are insufficient funds in the treasury. Thus, the Government is scarcely able to make the financial ends meet, and the "ways and means," in the shape of increased taxation, find it difficult to keep pace with the increased expenditures. It is to be hoped that the nation, in spite of these drawbacks, will be able ultimately to "pull through;" and this seems probable, in view of the development of the country and the increased resources of the people, which are everywhere visible.

RECEIPTS AND EXPENDITURES.

In his late message to Congress, the President stated that the expenditures of the nation for the fiscal year which ended on the 31st of March last were \$72,065,221 in currency and \$19,271,941 in gold. Of this, \$58,578,898 in currency and \$17,793,322 in gold were for current expenses of the Government and for the service of the public debt. For the same time, \$13,486,322 in currency and \$1,473,371 in gold were paid out of the treasury for appropriations outside of the budget, as also an issue of \$5,675,600 in bonds to pay for "floating debts." The President protests against these annual extraordinary drains upon the treasury, "which make it impossible to have any fixed or regular financial regimen." At the same time, he says, in reference to the service of the foreign debt, that "it has been attended with perfect regularity," and that, "taking advantage of the favorable rates of exchange, owing to its great abundance on the market, the sums necessary to meet all outstanding engagements with bondholders for the year had been transmitted to London in advance." The budget for 1894 was as follows:

Department.	Currency.	Gold.
Congress.....	\$1,992,016	
Interior.....	20,983,582	
Foreign relations.....	811,672	\$321,888
Treasury.....	4,922,624	
Public-debt service.....	1,209,019	14,192,179
Justice, Worship, and Education.....	10,871,088	
War.....	15,729,149	
Navy.....	8,210,205	
Total.....	64,729,355	14,514,067

Besides this, bonds to the amount of \$2,400,000 were ordered by Congress to be issued to the Department of the Interior for outstanding indebtedness.

REVENUES OF 1894.

The national revenues for 1894 were \$28,255,719 in gold and \$21,142,920 in currency. Reducing the gold to paper, the total was \$122,015,838

in currency, against \$125,428,435 in currency in 1893. The items of revenue, reduced to currency, were as follows:

Sources of revenue.	Amount.	Sources of revenue.	Amount.
Importation.....	\$82,514,228	Internal imposts—Continued.	
Exportation.....	9,697,510	Beer.....	\$355,341
Warehouse.....	2,460,345	Matches.....	1,333,770
Stamped paper.....	5,176,106	Banks.....	540,864
Stamps.....	929,393	Mines.....	123,359
Licenses.....	1,593,996	Port tractions.....	65,834
Territorial taxes.....	1,475,140		479,032
Post-office.....	2,288,004		1,666,457
Telegraphs.....	1,038,504	Northern Railway.....	661,907
Light-houses.....	588,510	Andine Railway.....	723,352
Sanitary visits.....	126,762	Chilecito Railway.....	110,143
Port dues.....	1,710,569	Catamarca Railway.....	43,373
Consular fees.....	329,956	Total.....	122,015,838
Internal imposts:			
Alcohol.....	5,203,103		

Reducing this to gold at 357, the total revenue in Argentine gold was just \$34,337,770.

APPROPRIATIONS FOR 1895 AND 1896.

The appropriations for 1895 amounted to \$15,081,315 in gold and \$70,-206,132 in currency; and the estimates of the revenue were \$24,690,000 in gold and \$31,073,400 in currency. The actual receipts for the year have not yet been published.

For the current year (1896), Congress has made appropriations for the support of the Government amounting to \$15,811,338 in gold and \$106,-022,066 in currency. The estimates of the revenue for this year are \$31,418,-000 in gold and \$56,260,000 in currency. Reducing the gold to currency at 320, the figures on their face show a deficiency of \$14,321,000. Among the items in the budget is \$18,000,000 extraordinary for the War Department, over and above the ordinary appropriations.

BONDED INDEBTEDNESS OF THE NATION.

The bonded indebtedness of the Argentine Republic on December 31, 1894, according to the figures of the statistical office, was as follows:

Indebtedness.	Paper.	Gold.
Internal bonded debt.....	\$48,844,774	\$189,288,500
External bonded debt.....		190,900,673
Total.....	48,844,774	380,279,173

Compared with the previous year, there is very little change in the amount of the external bonded indebtedness; but the figures show a reduction of \$34,793,800 in the amount of the internal bonded indebtedness. The reduction, however, is only apparent, as the amount was comprised in Government bonds held by banks to secure their circulation, which the Government retired upon taking upon itself the guaranty of the notes.

PROVINCIAL BONDED INDEBTEDNESS.

There is no change since my last report in the amount of the bonded indebtedness of the provinces, excepting that another year's interest has been added to the principal. The amounts, in gold, stand about as follows:

Provinces.	Indebtedness.	Provinces.	Indebtedness.
Buenos Ayres.....	\$50,532,914	Catamarca	\$3,217,964
Cordoba.....	23,294,651	Tucuman	3,051,756
Santa Fé.....	20,081,955	San Luis.....	927,068
Entre Rios.....	16,380,034	San Juan.....	2,064,420
Corrientes.....	6,309,183	Total	131,685,833
Mendoza.....	5,825,888		

In the case of nearly all the provinces, it is utterly out of the question for them to raise the revenue to meet the service of the interest on these amounts. The scheme which the holders have had before Congress for the last two years by which, on certain conditions, the Argentine National Government should assume this provincial indebtedness still hangs fire. At the recent session of Congress, the measure passed the House of Deputies, but was thrown out in the Senate. By its terms the Government is to issue 4½ per cent bonds in lieu of those of the provinces at their market value.

ARGENTINE BANK CIRCULATION.

There has been but little change in the amount of bank notes in circulation by the different national banks during the last year. The aggregate circulation on the 31st of March, 1895, was as follows:

Banks.	Circulation.	Banks.	Circulation.
National Bank.....	\$140,152,296	Bank of the Province of—	
Bank of the Province of—		Corrientes.....	\$562,718
Buenos Ayres.....	68,757,951	San Luis.....	273,337
Santa Fé.....	14,765,311	Bank of Buenos Ayres.....	1,375,530
Entre Rios.....	5,476,006	Bank Aleman Transatlantico.....	742,200
Cordoba	16,740,609	Bank of Mendoza.....	3,942,920
Salta.....	3,276,880	Treasury notes.....	11,848,600
Tucuman.....	3,207,559	Bank of South America and Great	
Santiago	4,792,451	Britain.....	249,800
San Juan.....	3,139,525	Old emission, National Bank.....	818,576
Rioja.....	4,258,676	Total	286,693,023
Catamarca	2,312,078		

The outstanding circulation at the same date in 1894 was \$289,565,682. The National Government has notified bill holders that it will protect the issues of the national banks. At the current quotations on the bolsa, however, the notes of the Argentine national banks are now worth about 30 cents on the dollar; in other words, it takes \$325 in Argentine currency to make \$100 in gold. It continues, however, to be the general medium of exchange—all business transactions, unless specially mentioned to the contrary, being effected in this currency.

HYPOTHECARY BANK OF BUENOS AYRES.

The condition of the Hypothecary Bank of the Province of Buenos Ayres is still undetermined. The personnel of the bank has been changed several times within the year, in the hope that it would be possible to bring some order out of the chaos in which its affairs are involved, but thus far without apparent results. The cédulas now outstanding amount to \$187,591,698 in currency and \$3,330,000 in gold. But the lands on which the mortgages are placed, it is claimed, are either valueless or they are valued at two or three times more than they could be sold for. The securities, taken altogether, are thought to be worth about 20 cents on the dollar. The bank has paid no interest for several years, and the price of the cédulas on the exchange is merely nominal, except in cases where creditors of the bank buy them up at their face value to meet their engagements with the bank.

NATIONAL HYPOTHECARY BANK.

The National Hypothecary Bank continues to do business, though under a great stress of difficulties, owing to the impossibility of realizing on securities in cases of default. The amount of cédulas which this bank now has outstanding is \$74,966,650 in currency and \$12,291,200 in gold. The latter are worth 50 cents on the dollar; the others are quoted at from 90 to 95 cents on the paper dollar.

TOTAL INDEBTEDNESS OF THE NATION.

I have to state that, wherever it has been possible, in the foregoing résumé of the financial condition of the nation and the provinces, I have given official figures; in other cases, I have used the figures which are accepted by the public as semiofficial. We may conclude, then, that the present outstanding indebtedness of the Argentine Republic, including that of the provinces, which it is probable the nation will yet assume, is about as follows:

Class of indebtedness.	Currency.	Gold.
Bonded debt of the nation.....	\$48,844,774	\$380,279,173
Bonded debt of the provinces.....	(?)	131,685,833
National bank circulation.....	286,693,093	
National cédulas outstanding.....	74,966,650	12,291,200
Provincial cédulas outstanding.....	187,591,698	3,330,000
Total.....	598,096,145	527,586,206

Reducing the currency to gold at 320, this makes a total of \$714,491,220. Besides this, there are floating debts, in the form of treasury certificates, issued to tide over deficiencies in the revenue. The Minister of the Treasury reported the amount to be \$8,093,413 in currency and \$4,558,363 in gold on the 31st of December, 1894. There are likewise large amounts due to the guarantied railway companies on account of the Government guaranties. At the time of the last report, the sum as published was \$15,073,054 (gold), and it is accumulating at the rate of \$4,973,581 (gold) per annum.

Thus it will be seen that the Argentine Republic is carrying a heavy load of indebtedness. With all the development which the country may expect to be blessed with in the future and all the increase of population which may come to it from immigration, it must of necessity be years, even by practicing the most rigid economy in its public affairs, before it can expect to extricate itself from its embarrassments. The rate of taxation which the Government is forced to levy, in order to pay even a limited proportion of the interest on its bonded indebtedness, is already having its effect upon the people and the industries of the country; and it is well understood that the taxes, in all their various guises, are now so heavy that capital already invested here is scarcely able any longer to pay dividends, and there are but few persons who are willing to make new investments, except in such lines of industry as the absolute necessities of the nation require.

But for the financial difficulties of the Government, the Argentine Republic would be on the way to great prosperity. It has the elements of wealth to a remarkable degree; and it is struggling, in spite of the burdens which keep it back, to develop the possibilities which it possesses. The annually increasing production of the country shows that the people are able and willing to do their share of the work; and, when confidence shall have been fully restored, the depression under which all its material interests have been suffering for the last five years will be lifted and the nation will have a new departure of industrial progress.

E. L. BAKER,

BUENOS AYRES, *January 24, 1896.*

Consul.

THE ARGENTINE REPUBLIC: GOVERNMENT STATISTICS FOR NINE MONTHS OF 1895.

I have the honor to inclose two copies of the report just issued by the Argentine bureau of statistics covering the exports and imports for the first nine months of this year, with some comparative figures for the same period in 1894.*

From this report, it will be seen that during the first nine months of this year there has been, according to the statistician's figures, a decrease of \$1,928,035 in imports, as compared with the corresponding period in 1894, and an increase in exports of \$12,636,554.

The prominent feature of the report is the illustration it furnishes of the constantly growing export trade of this country; especially is this advance noticeable in live animals, flour, and butter. The advance in the exportation of the latter article is worthy of attention, indicating, as it does, the gradual and steady development of the agricultural population in lines other than the production of wheat.

As almost all of both articles come from the United States, you will be glad to note an increase in the importation of pine lumber and kerosene. The

* Filed in Department of State.

increase shown by the report in the importation of pine lumber amounts to over 12,000,000 feet (these figures, however, do not agree with Norton & Son's shipping list, which gives the total increase as considerably less, namely, about 3,250,000 feet). There has also been an increase in the importation of kerosene to the approximate amount of 27,500 barrels.

As the statistician's figures on lumber imported from the United States and Canada may be of interest, I inclose the statement separately.

The following synopsis shows briefly the increase or decrease in the importation of prominent articles, according to the statistician's figures:

Increase.

Rice	tons...	5,892
Olive oil.....	do.....	1,451
Coffee.....	do.....	1,181
Cigars, cigarettes, and tobacco.....	gold dollars...	776,327
Wines and liquors.....	do.....	1,374,443
Pine lumber (28,495 cubic meters).....	feet...	12,080,170
Kerosene	barrels...	27,877
Coal	tons...	82,440

Decrease.

Sugar*	tons...	8,994
Machinery, all kinds.....	gold dollars...	1,527,638
Materials for railroads or public works.....	do.....	199,913
Paper and articles manufactured of.....	do.....	653,722
Iron and products of.....	do.....	1,476,065

The following table shows the increase in principal articles of export:

Articles.	Quantity.	Value.
Live cattle.....	number...	\$1,607,740
Sheep	235,578	627,645
Mules	do.....	73,395
Flour.....	tons...	1,288,803
Butter.....	pounds...	35,542
Quebracho wood in logs (for tanning).....	tons...	73,763
Grease.....	do.....	15,278
Goatskins.....	kilograms...	60,630
Steer and cow hides*.....	do.....	4,899,163
Horsehides.....	number...	60,003

* The value of steer and cow hides here given is probably based on the custom-house valuation. The actual value of the increase in shipments, using as a basis the average current market price here for the nine months, would be \$785,523.59, instead of \$4,899,163, as given in the report, or a net shrinkage of \$4,113,640 in this item.

In connection with the above statistics, I deem it proper to call attention to my No. 49, of August 13, 1894,† in which I mentioned the fact that errors must necessarily exist in the figures given out by the statistical office, on account of their using, as the basis of their calculations in computing values, the arbitrary custom-house valuation given to each article.

* The tariff on refined sugar is 9 cents (gold) per kilogram; on raw sugar, 7 cents. The average retail price at which sugar is sold here is as follows: Refined in cubes, 21 cents (gold) per kilogram; refined, 18 cents. Tucuman (common white), 12 cents.

† Printed in Foreign Relations, 1894, p. 7.

The present report furnishes several illustrations of the errors incident to this method of calculation. For instance, as above noted, it will be observed that while the report shows an increase in the importation of pine lumber of more than 12,000,000 feet, it shows at the same time a decrease in the value of the article of \$703,852. This evidently comes from the statistician's use of the old customs valuation for the lumber imported in 1894 and of the customs valuation agreed upon by the Minister of Hacienda in 1894, as reported in detail in my No. 63, of October 5, 1894,* for the lumber imported in 1895. By reference to my No. 63, it will be seen that the latter valuation, while considerably above the actual worth, is much below the old valuation. Taking the figures of the report as to quantity as a basis, the approximate value of the increased quantity of lumber imported would be more than \$1,300,000, instead of a decrease of \$703,852. Another example of this method of computation may be found in the item of kerosene. By a decrease in the tariff law of 1895 of 2 cents per liter in the arbitrary customs valuation of this article, an increased importation of 27,877 barrels is made to show a decrease in the value of the importation for the nine months of \$164,403.

The report shows a steady growth in both the import and export trade of the country and indicates a healthy condition of business.

WILLIAM I. BUCHANAN,
Minister.

BUENOS AYRES, *December 5, 1895.*

[Inclosure.]

Quantity of lumber imported into the Argentine Republic from the United States during the first nine months of 1895.†

Description.	Quantity.	Argentine custom-house valuation.
	<i>Sq. meters</i>	
Pine	6,795,795	\$2,018,693
Walnut.....	2,366	1,274
Oak.....	5,273	3,691
Other kinds of wood.....	120,260	38,784

The statistician also states that the following represents the importation of lumber from Canada during the nine months quoted: Pine, 4,645 square meters, valued at \$1,625 by the Argentine custom-house.

* Printed in Foreign Relations, 1894, p. 14.

† This information is furnished by Señor Latzina, Argentine Government statistician.

THE ARGENTINE REPUBLIC: CHANGES IN THE TARIFF.

I have the honor to inclose herewith the tariff law for 1896, passed by the Argentine Congress on the 4th instant.* It will be noticed that the tariff law of 1895 is declared in force for 1896, with some modifications and changes. Lumber remains the same as last year, with the exception that walnut has been added to the list of woods dutiable at 15 per cent. Agricultural machinery remains the same as last year, with some favorable modifications, the most important being the reduction of the duty on horse rakes from 25 per cent to 5 per cent. I am glad to be able to advise you that farm wagons remain on the 10 per cent list, and that there has been added to the clause "pieces to repair the same." Crude petroleum and naphtha remain free of duty, and "carburina" (a light form of naphtha used by the gas companies here) has been added thereto.

WILLIAM I. BUCHANAN,

Minister.

BUENOS AYRES, *January 10, 1896.*

THE ARGENTINE REPUBLIC: FLOUR-MILLING INDUSTRY.

I have lately received several letters from firms in the United States asking for information relative to the flour-milling industry in this Republic. Inasmuch as the same questions are asked by each writer, I have deemed it best to give briefly a synopsis of the leading features of the industry, in order that correspondents may be able to secure all obtainable information. From the best data to be procured at this time, the number of mills in the Republic is as follows:

Provinces.	Number.	Provinces.	Number.
<i>First-class mills.</i>		<i>Second-class mills.</i>	
Federal capital.....	29	Cordoba.....	7
Buenos Ayres.....	86	Mendoza.....	6
Santa Fé.....	76	San Juan.....	5
Entre Rios.....	36	Total.....	18
Cordoba.....	17	<i>Third-class mills.</i>	
Mendoza.....	6	Mendoza.....	20
San Juan.....	6	San Juan.....	10
Catamarca.....	1	Jujuy.....	30
Tucuman.....	3	Salta.....	44
Salta.....	4	Tucuman.....	15
Rioja.....	1	Total.....	122
Santiago.....	6	Grand total.....	416
San Luis.....	2		
Corrientes.....	1		
Jujuy.....	1		
Chubut Territory.....	1		
Total.....	276		

* Filed in Department of State.

According to these figures, there has been an increase of only thirty-one mills during the past fifteen years. It is to be remembered, however, that all of the mills built within that period have been of the very best class and of large capacity. It is altogether probable that the census of 1881 took into account small mills that are not in existence to-day.

The roller system of milling was introduced about fifteen years ago, and many of the mills here will compare favorably with the most perfectly appointed mills in the United States, although not so large as some there.

There are few water mills, certainly not more than twelve or fifteen in this province, and I doubt whether there are any in the Province of Santa Fé.

The cost of coal here at this time is, more or less, \$4.85 (United States gold) per ton.

The estimated capacity of the mills existing in the Republic at this time is as follows:

Mills in the—	Yearly capacity of flour.	Mills in the—	Yearly capacity of flour.
	<i>Tons.</i>		<i>Tons.</i>
Federal capital.....	217,600	Other provinces.....	89,760
Province of Buenos Ayres.....	435,200	Mills of third class.....	44,880
Province of Santa Fé.....	435,200	Total capacity.....	1,346,040
Province of Entre Rios.....	81,600		
Province of Cordoba.....	40,800		

It is impossible to give an accurate statement of the output of these mills during the past year; but assuming, for the purpose of computation, the population of the Republic to be 3,000,000 and allowing 80 kilograms of flour for each and 60,000 tons as the probable amount exported during the year, the result would be a total production for the year of about 300,000 tons of flour, or about 40 per cent of the estimated capacity of the mills. This is approximately correct, I believe.

It must be remembered that many of the mills are small, and, being located in parts of the Republic remote from this city, they are confined in production altogether to the local demand for flour.

The mills I have visited in this province and in Santa Fé find little difficulty in disposing of all the flour they can produce, but there seems to be no demand for new mills in the wheat districts now cultivated.

The greater part of the wheat grown in the Republic is of the Barletta variety. This yields from 14 to 15 per cent of gluten when grown near the coast of the River Paraná and 1 to 2 per cent less when grown in the interior. The Saldomé is another variety grown in some parts of the Republic, but it is deficient in gluten, yielding only 10 to 13 per cent.

I am told by millers that, with good machinery and average wheat, every 100 pounds of wheat will make 66 to 70 pounds of flour.

The wholesale price of flour in this city at this writing is \$1.80 (United States gold) per 100 pounds. The price of bran is 43 cents (United States gold) per 100 pounds.

All flour is shipped in sacks of 90 kilograms (198.4 pounds) each. The cost of the empty sack is 12 cents (gold).

Labor is not expensive, as all wages are paid in paper, the result being that employers whose productions are sold on a gold basis—such, for instance, as wheat and flour—gain largely by the use of the depreciated paper currency of the country.

The high freight rates on coal and flour between this city and interior points make it a difficult task for millers to secure any profit on their production.

The larger part of the flour exported from this country is consigned to Brazilian ports. The freight rates on flour between this city and Brazilian ports is as follows: Santos,* 12s. to 13s. per 1,000 kilograms; Rio de Janeiro,* 10s. to 11s.; Bahia and Pernambuco, 14s. to 16s.

The duty on flour-mill machinery is 10 per cent on the value of the article.

The Argentine Government levies an export duty on flour of 4 per cent on a fixed value of \$4 (Argentine gold) per 100 kilograms (220.46 pounds).

WILLIAM I. BUCHANAN,

BUENOS AYRES, *January 2, 1896.*

Minister.

THE ARGENTINE REPUBLIC: GERMAN TRADE EFFORTS.

Germany carries on a very large trade with the Argentine Republic. It is second only to her trade with the United States—that is, compared with other countries of the American continent. It amounts to one-ninth of all that comes to Germany from North and South America and to from one-tenth to one-fifteenth of all that is sent to North, South, and Central America. While facts and figures show a constant increase in imports, they show fitful changes in exports. Germany imported from Argentina in 1889, goods to the amount of 85,500,000 marks; in 1892, 86,900,000 marks; in 1894, 103,900,000 marks; and sent, in 1889, 60,700,000 marks; in 1890, 26,100,000 marks; in 1891, 18,600,000 marks; in 1892, 35,200,000 marks; in 1893, 42,500,000 marks; and in 1894, 30,200,000 marks.

Germany has taken second place in imports among the nations doing business with the Argentine Republic and fourth place in exports. The following table shows the relative trade standing of the leading countries carrying on commerce with that country:

Countries.	Imports.	Exports.
Germany.....	\$10,689,487	\$11,544,516
England.....	33,189,014	20,410,884
France.....	10,156,320	18,844,323
Italy.....	8,873,377	3,066,767
Spain.....	1,703,314	2,384,507
Belgium.....	8,958,561	12,769,541
United States.....	10,149,018	5,285,210

* Lighterage at 4s. 9d. to 5s. per 1,000 kilograms should be added to the above rates.

Many articles sent out to South America from Germany and many articles coming to Germany go and come through English, Dutch, and Belgian ports; hence, the real amounts must be much larger than those put down in the table, for the Argentine Republic puts to each country's credit the goods going to the ports of that country, paying no attention to final destination. Notwithstanding all this, the importance of Germany's trade with Argentina will be seen by comparing the facts of fifteen years ago with those of 1894. In the former period, Germany had 5.2 per cent of the imports and 4.4 per cent of Argentine exports; in 1894, the figures were 11.5 per cent and 11.4 per cent, respectively. Expressed in percentages, Germany's increase has been remarkable.

The rapid growth, both in percentages and actual amounts bought and sold, is due, first of all, to the energy and skill of Germany's agents in Argentina, and, second, to the greatly improved capacities of German industries. Such results are calculated to encourage renewed efforts.

"The best way to secure Germany's interests," says the writer from whom I am quoting, "will be the establishment of German chambers of commerce in Argentine cities. The time for this is now. It could never be more opportune, for Chile is trying to get the leadership among the South American states. Against this, the Argentine Republic, whose chief city is one of the world's capitals (Buenos Ayres), is going to fight. What German chambers of commerce in foreign countries are worth to the Fatherland was shown recently by the German Chamber of Commerce in Brussels, which warned the Empire how harmful for German commerce would be Belgium's projected tariff increase.

"The English, French, Italians, and Belgians have, in recent years, devoted a great deal of energy to erecting chambers of commerce in foreign parts. There can be no question of their importance, both as to exports and imports. The Belgians and English have one in Paris; the French, in Buenos Ayres, Montevideo, Odessa, New Orleans, and Constantinople; the Italians, in Buenos Ayres, Paris, and Constantinople. Who can doubt for a moment that these bodies help to make trade both ways for the mother country?

"Germany needs just now a chamber of commerce in Buenos Ayres to increase and make her export trade with that city and Argentina more permanent and less fluctuating. Buenos Ayres, possessing such a body, comes at once into contact not only with it, but with all the chambers of commerce at home, and last, not least, with the home Government. The opinions and efforts of such a body would find a hearing and belief everywhere; and the direct relations of German houses with those of Buenos Ayres must result in helping the home trade; not only this—for such things are never one-sided—Argentina will be bettered by it.

"Germany's ever extending and developing industries demand new fields for their products. The home market is not large enough by half to take her surplus production. A chamber of commerce in Buenos Ayres must

materially aid in extending the Empire's exports to that city and the State of which it is the capital. This no one doubts. It is eagerly hoped steps will be taken before it is too late; before others, benefiting by our experience, anticipate our intentions and make vain our efforts."

The export of wool from Argentina has increased very materially during the year ending September 30, 1895, as the following table will show:

Exported to—	1893-94.	1894-95.
	<i>Bales.</i>	<i>Bales.</i>
Hamburg	61,723	65,307
Bremen	51,330	66,418
Dunkirk	179,081	176,369
Havre	19,658	14,063
Bordeaux	1,323	2,488
Antwerp	95,940	112,702
Genoa	3,771	11,550
Liverpool	4,491	9,071

Here, again, we have an increase of German trade. I have called attention in another report to the desire on Germany's part to erect chambers of commerce in other countries. The world is not half awake to the work this people are doing. There is nothing like it anywhere else on earth, except, perhaps, in our own country, and even we are not building as they are.

J. C. MONAGHAN,

Consul.

CHEMNITZ, *February 3, 1896.*

THE ARGENTINE REPUBLIC: A GERMAN AGRICULTURAL ENTERPRISE.

Steps are being taken in the city of Leipsic for the formation of an Argentine agricultural enterprise. A preliminary capital of 100,000 marks (\$23,800) is anticipated, and the object of the society is stated to be the acquisition of lands in Argentina suitable for agriculture and cattle rearing and the sale and export of the produce and live stock. The board of directors will be intrusted with the purchase of the land. All payments of subscribers are to be made to a bank, to be further determined, or to the firm of Max Epperlein & Co., Leipsic, according to the legal requirements and within limits of time to be decided upon by the board of directors. As soon as 50 per cent of the estimated capital has been subscribed, a general meeting will be held and each subscriber will be informed at least ten days beforehand of the day and hour of meeting.

The management of the enterprise will be intrusted to (1) an unpaid board of directors consisting of at least five, and not more than eleven, members; (2) for the business management, the firm of Max Epperlein & Co., in Leipsic, with a branch house in Buenos Avres; (3) for the farm

management, Mr. Edward Devrient, who will be required to reside on the land and will receive a fixed salary of \$714 per annum.

Neither here nor in Buenos Ayres do the directors require any fixed compensation beyond the repayment of their expenses. The shareholders are first to receive 4 per cent interest from the profits, the directors will then be paid three-tenths of the remainder for their services, the agricultural director will receive two-tenths of the sum as commission, and the remaining five-tenths will be shared as an extra dividend.

THEODORE M. STEPHAN,

Consul.

ANNABERG, *December 24, 1895.*

ARGENTINE REPUBLIC: SHEEP SCAB AND SHEEP DIPS.

In pursuance of instructions, I herewith transmit to the Department a report on the subject of sheep scab and sheep dips in the Argentine Republic.

The great plague of the wool growers of the Argentine Republic is the sheep scab (*Scabies ovis*). They suffer losses occasionally from drought, floods, storms, wet "camps," and foot rot, but scab they have always with them. Forty years ago, the disease was not known here. The sheep, pretty much all "creollas," or native, were clean skinned and entirely free from diseases which affected the wool; but when sheep farming got to be one of the industries of the country, it was found to be necessary to refine the wool; and with the importation of rams for breeding purposes, the scab came likewise. It was first introduced with some imported stock from England; and unless something is done to counteract and stop its ravages, it has certainly "come to stay." It has spread to all parts of the country, and there is not a sheep estancia or cabaña but suffers more or less from its presence.

NO LAWS WITH REFERENCE TO SCABBY FLOCKS.

Thus far, although the Argentine Congress and the different provincial legislatures have had the subject before them in all sorts of projects for killing or isolating diseased flocks, nothing in the way of laws going radically to the extirpation of the disease has yet been enacted. Though the wire fencing, which is now getting to be pretty general throughout the pampas, has done something to curtail its ravages by separating the sheep into different paddocks, scabby flocks are everywhere allowed to live alongside of the clean flocks, and thus, the infection spreads. The labor and the cost to sheep farmers of sheep dips and scab specifics for curing their flocks and seeking to get rid of the disease, go on year after year; and the total expense annually for this item of outlay will be appreciated when it is remembered that the number of sheep in the Argentine Republic is now estimated to be 80,000,000.

THE SHEEP INDUSTRY.

The increase by decades since 1830 has been as follows:

Year.	Number.	Year.	Number.
1830	2,500,000	1870	41,000,000
1840	5,000,000	1880	64,000,000
1850	7,000,000	1890	75,000,000
1860	14,000,000		

Making allowances for losses from droughts, floods, etc., the annual increase is now estimated to be 15,000,000; but of this increase about one-half is killed for food, thus leaving a net increase annually of 7,000,000. It is also to be considered, however, that besides the home consumption, there has grown up in the last few years a very considerable trade in frozen carcasses for exportation to European markets, which still further keeps down the natural increase. Since this frozen-meat industry was inaugurated in 1885, the shipments have been:

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	<i>Tons.</i>			<i>Tons.</i>	
1885	2,860	\$75,323	1890	20,413	\$1,633,105
1886	7,350	360,508	1891	23,741	1,899,360
1887	12,038	963,112	1892	25,436	2,034,898
1888	18,027	1,498,182	1893	25,041	2,004,254
1889	17,487	1,399,276	1894	36,486	1,864,110

IMPORTATION OF SHEEP DIPS.

When it is borne in mind that not merely is the wool ruined by scab, but that the carcass itself is rendered unfit for food when the sheep is thus diseased, the absolute necessity on the part of the sheep farmer of curing scabby flocks will be better understood. Thus the amount expended annually for sheep dips and scab specifics goes on increasing as the flocks and shipments increase. I have not the custom-house returns for previous years before me, but for 1885, the value of the importations amounted to \$190,261, and for 1894, to \$840,551, an increase in ten years of \$650,290. In 1890, the number of tons imported was 1,078; in 1894, it was 2,262, an increase in five years of 1,484 tons. The following table shows the importations by countries for the years named:

Country.	1891.	1892.	1893.	1894.
Germany	\$38,826	\$80,808	\$101,172	\$26,585
Belgium	20,600	45,195	27,964	44,842
United States	55,589	32,604	45,126	8,790
France	14,830	3,702	197	929
Great Britain	151,889	671,079	353,121	484,976
Italy	47,800	50,525	30,762	59,364
Uruguay	6,245	12,040	715	4,577
All other countries	2,072	15,945	2,423	10,488
Total	337,852	918,898	561,480	840,551

For the first nine months of the present year, the importations have already amounted to 2,980 tons, valued at \$745,260, thus showing that the business of supplying the sheep farmers of the Argentine Republic with specifics for the cure of scabby flocks steadily increases with the increasing number of sheep.

FORTY DIFFERENT SPECIFICS.

It is not possible to give a list of all the various concoctions and washes which are shipped here for this purpose. I am told, however, that there are now more than forty varieties of dip manufactured abroad on sale in this market. It may be that many of them are simply "made to sell," but some have a great market and do their business in a very satisfactory manner. Besides the imported specifics for scab, there is also a large quantity of dip made in the country, many of the large sheep farmers having, by long experience, obtained a practical knowledge of the preparation of such washes and learned the best methods of applying them. The usual way of treating sheep suffering from scab is to drive them through a narrow trench, with sloping entrance and outlet, dug in the ground adjoining the pens or corrals, about 5 feet deep and 40 feet long, walled up on the sides with brick and cemented on the bottom, and filled with the prepared solution. As the sheep undertake to swim or pass through this bath, one after another, they are submerged or pushed under the surface by sheep crooks. Thus, as thoroughly as possible, the liquid is made to reach every part of the animal. They are then passed into other corrals until they are dry. One such bath, if the dip is good and strong, generally suffices to kill the parasites; but to thoroughly eradicate the germs, they should be given another bath in about fifteen days. Thus, in the case of large flocks—and some of the estancias carry from fifty to seventy-five thousand sheep—the operation is not only tedious, but expensive. In small flocks, hand washing is also employed with excellent results, as one is thus enabled to reach thoroughly every spot which is affected.

WHERE THE DIPS COME FROM.

It will be observed that a very large proportion of the specifics for scab are imported from Europe—indeed, from Great Britain. The United States, of late years, has contributed but very little to the quantities imported. Why this is the case, I do not know, unless it be that there are no American importing houses in the Argentine Republic to interest themselves in the matter. Certainly, the ingredients are as cheap in the United States as in England, if not cheaper. Most of that which is shipped from the United States is some preparation of tobacco, and, I believe, generally comes in barrels. As a general thing, that from England is either a powder to be dissolved in water or a liquid solution which comes in iron kits or drums, holding from 1 to 5 gallons, and is diluted to the proper strength when it is to be used.

NO DUTY ON SPECIFICS.

While, as I have stated, the Argentine Government has not yet enacted any drastic laws to rid the country of the disease, it allows all preparations for curing it to be passed through the custom-houses free of duty. It is true that, in 1894, a duty of one-fourth of 1 per cent ad valorem was put upon all such specifics, but it was omitted in the tariff which is at present in force, and it will be omitted, in all probability, from the tariff for 1896.

AMERICAN DIPS.

If there are those in the United States who contemplate engaging in the preparation and shipment of sheep dips to the Argentine Republic, they should first be sure that they have a first-class article to put upon the market; otherwise, while they may succeed in selling it once, its demerits or disadvantages will soon come to be understood. It is only the good, reliable specifics that can be expected to find steady purchasers among sheep farmers; but reliable articles will soon secure a general demand. There are already such articles on sale here, having stood the tests and trials of many years. The most effective way to get a trial here is by sending a man who understands the business along with a consignment of the dip. Having a direct interest in its success, he will not be slow in illustrating to the sheep men what it can do. He would then be in a condition to secure an active and reliable agent here, who understands the trade and the people, and who, by keeping the material always in stock, would be able to supply all demands for it at once, without waiting for an order to be sent to the United States to be filled. Or, if the dip, upon trial, is found to fulfill all the conditions of an infallible specific, manufacturers of the article might be able to find houses here who would buy on their own account, provided they could obtain as satisfactory terms and conditions as those offered by European shippers. So far as the price is concerned, of course that must necessarily depend upon the cost of the ingredients and the expense of compounding them, and manufacturers know better than I do at what figures they are able to put their own preparations upon the market. Whether they be of tobacco, arsenic, lime, sulphur, or some other chemicals, the less expensive the material, the cheaper must be the article when prepared for sale. The custom-house valuation of such specifics is 25 cents per kilogram. When it comes in drums, I am told that the price ranges from 80 cents to \$1.25 per gallon, including the drums.

There is always more or less demand for these specifics, for scabby flocks must be taken care of at once, but the general season for administering the dip is just after the shearing is over, as it then acts both as preventive and cure. The special details of the business, however, can not be anticipated, but must be left for those who buy or sell to arrange for themselves.

E. L. BAKER,
Consul.

BUENOS AYRES, *December 8, 1895.*

DEVELOPMENT OF EASTERN NICARAGUA.

Consul O'Hara, of San Juan del Norte, Nicaragua, in a dispatch to the Department of State, transmits a translation of the report of Hon. Santiago Callejas, special commissioner of the Government of Nicaragua, on the affairs of the Atlantic coast of that Republic, published in the *Diario de Nicaragua*. In the course of this report, Mr. Callejas says:

At Castillo, on the Indio River, where I arrived on October 2, I inspected the fortifications, and have made, in a special report to the President, a few suggestions, which will, in my opinion, make Castillo an impregnable military position, commanding all the surrounding places.

I visited the works of the canal company, in whose warehouses I found only a few safes and a large quantity of beds. Three good locomotives, some towboats, various boilers, and a large quantity of rails and iron pipes are in a state of comparative abandonment. The dredges are almost completely ruined. About a mile of the canal has been constructed, and has not yet suffered.

Rama City, on the Bluefields River, is a prosperous place, thanks to the development of its agriculture, especially the cultivation and export of bananas to the United States. From February to July, the exportation is very large, but during the rest of the year the demand for bananas is small. The export duty has, therefore, been reduced to 2 cents a bunch during this period.

The work on the railroad from Rama to a port on Lake Nicaragua is suspended, owing to the resignation of the chief engineer, Mr. Higby. I urge upon the Government the immediate completion of this road, if only as far as Las Iguanas, a distance of 10 miles, which would open up a new territory for the cultivation of bananas and even coffee.

Rama is now in telegraphic communication with Mobile. The line between Rama and Bluefields will be completed in two months.

I visited the mahogany works of Mr. Emery, at La Cruz, 100 miles up the river from Bluefields. Mr. Emery exports about 2,000 mahogany logs per month.

Twenty-five miles above La Cruz, near the settlement of Sixecuas, there are plantations of cacao and sugar cane, which are cultivated with good results. Mr. Rojas, a planter, has 4,000 cacao trees, which produced this year 12,000 pounds of good cacao as the first crop. It sold at 50 cents per pound.

I next proceeded up the Wawa River, on whose banks are immense pine forests, which extend for many miles. Sugar cane, cacao, corn, potatoes, and other products of the tropical zone are grown and yield abundantly. There is a species of wild cacao which, I was assured, grows and bears as well as any on the best lands of the department of Rivas. The Wawa pine is as good as the best pitch pine in the United States.

The Wauhi Segonia River has a vast amount of land well adapted to the cultivation of cereals and sugar cane. Some plantations of cacao and sugar cane giving good returns were found here.

This river, and also the Wawa, Rio Grande, Prinzipolca, and Escondido, have the drawback of shallow bars, which can only be crossed by boats of light draft. The Government should at once open these bars. If fast steamers of great draft could reach Rama, bananas could be exported to Philadelphia and New York and perhaps supply the markets of Europe.

Light-houses are much needed at Cabo Gracias-á-Dios and Bluefields Bluff.

In the collection of duties, the system by weight has been substituted for that of ad valorem. Under the old law, a Bluefields merchant paid duty at the time of importation, and the same goods, if afterwards sold at Rama, etc., were subjected to a further duty. This abuse has been abolished, and hereafter a single duty will be paid at Bluefields.

The necessity for a telegraph line between Bluefields and the Bluff being very apparent, I have authorized its construction.

A higher court was organized at Bluefields.

During the month of August last there were entered at Bluefields 33 boats or sloops, 27 schooners, and 14 steamboats of 5,324 tons register, 332 crew, 203 passengers, 9 cases and 2 bags of mail, 203 pieces of baggage, and 12,380 packages of merchandise.

The receipts for the month of October were \$37,719.83 and the expenses \$26,698.26, leaving a balance of \$9,411.20.

Nine steamboats arrived during this month to load with bananas, taking 100,442 bunches.

I found the people of Mosquito Coast contented under the rule of the present administration, and urge the continuance in office of General Reyes, inspector-general.

ROENTGEN-RAY EXPERIMENTS.

Referring to my dispatch of January 16,* I have the honor to report further as to the invisible, or X, rays discovered by Prof. Wilhelm Conrad Roentgen, of Würzburg, and to transmit a copy of the pamphlet in which Professor Roentgen explains his discovery.†

Among the later facts to be noted in regard to this discovery, some of which may have escaped the newsgatherers for the press, is the use of the rays to detect false pearls. Professor Goldstein showed this after an exposure of forty-five minutes. He has also shown that the rays have chemical properties, in that they change the color of salt.

Professor Doelter, of the University of Graz, Austria, has proved that the X rays can be used to detect false diamonds as well as false pearls. A

* Printed in CONSULAR REPORTS No. 186 (March, 1896), p. 348.

† Pamphlet filed in the Bureau of Statistics, Department of State.

Berliner named Dr. Hezekiel having invented a special sensitive paper (Bromsilberpapier) for photographs, Dr. Frentzel, of the Agricultural High School, has used this paper for direct reception of the X rays. The object being placed before the paper in question, images or shadows are thrown directly on the paper. Thus, the image is not inverted, as in the indirect mode of printing from the negative. It has been found that many pictures can be taken at once, since the Roentgen rays penetrate layers of the paper and register a picture on each leaf.

To see where the Roentgen rays are present, Professor Salvioni, of Perugia, takes what he calls a cryptoscope—a tube like one-half of an opera glass—which, in place of the lens, has a pasteboard partition impenetrable to light. The inner side of this partition is painted with barium-platinum salts. As soon as the X rays are thrown, they penetrate the pasteboard and cause the surface behind to glow.

That the Roentgen rays had been passed through aluminium was known before Roentgen's announcement. Rector Bender, in Spires, has now passed them through a brass counter, and the photograph distinguishes an inscription on one side and a bird in relief on the other. The study of metals for flaws and strain is regarded by many observers as extremely important to makers of machinery and guns, in all cases where much depends on the even texture of the object throughout. Heavy pieces of cast metal, such as guns and shafts, can always be examined for flaws or cracks by delicate experiments with electricity, the charges registering differently when passed through a flawless and a defective piece. It is believed here that when scientific men can control the Roentgen rays, still another method of testing guns, armor plates, and machinery will be available.

The discovery has excited so much interest that a central laboratory for the study of the Roentgen rays is proposed for erection at Frankfort.

As very many people are working with these rays, new methods of work are being found out. Thus, the length of exposure necessary, which was lately one hour, has been reduced to a few minutes. Moreover, it has been found that the heavy charges of electricity, which formerly destroyed many Crookes or Hittorp tubes by their violence, are not necessary. Moreover, the tube is not absolutely required. By taking an ordinary electric incandescent lamp and placing outside of it at a certain distance a metal plate, this plate becomes the radiating center for the rays instead of that end of the tube whence the cathode rays radiated.

In surgery and medicine, finally, it has been found that ocular examinations can be made of the tissues and interior parts of the body simply by placing the electric tube, well covered with a black cloth, in a dark room over against a screen which has been painted with a mixture of barium, platinum, and cyanium. The part of the body to be examined is placed between the electric tube and screen, when the inner structure of the flesh (and, to some extent, of the bones) is seen on the other side of the screen. The simplicity of this procedure is remarkable; but what is still better, is the fact that the

position of the patient can be changed from time to time, so that the interior tissues can be examined for foreign bodies or hurtful growths at various angles, and the shape of organ and bones determined by the examining physician.

CHARLES DE KAY,
Consul-General.

BERLIN, *February 19, 1896.*

Some of the Vienna medical savants are actively engaged in making experiments with Roentgen rays, and have succeeded in making very satisfactory surgical operations with the help of this discovery. Professor Neusser, of the Vienna medical faculty, demonstrated recently, in his clinic, how diagnoses could be made, with the Roentgen flashes, of gallstones as well as bladder stones. The latter, being a phosphate, were not penetrable by this light. Thus was obtained a clear white surface on black ground, whereas gallstones, being of cholesterin, the Roentgen flashes penetrated them partly and the photograph obtained showed a faint dark impression. The difference in these two pictures was very striking. The professor then showed a third picture, representing a gallstone which had been photographed through a four-fingers-thick liver. He is of the opinion that, with the assistance of this new discovery, much pain will be spared a patient when undergoing an operation, for not only can the surgeon first convince himself of the presence of the body to be removed, but also learn the precise position of it.

Dr. Albert von Mosetig, together with Professor Exner, applied the Roentgen light on two other operations with marked success. In one case, a man had a small revolver ball imbedded in his hand; the task was to find the exact locality of the ball. The photograph soon showed the hiding place, and on its indication Dr. Mosetig commenced the operation. The result proved that the Roentgen light showed with mathematical precision the very place where the surgeon ought to insert the knife. The second case was an abnormal growth on the foot of a girl. The photographic impression showed the last upper phalanx of the large toe in a doubled-up condition; the diagnosis furnished by the apparatus proved most trustworthy. The superfluous phalanx was easily removed by the professor in a short space of time, he remarking that, with the aid of the picture, he could easily see that the twin phalanx stood in no articulating relation with the other phalanx, and all that was necessary was to remove the free joint.

MAX JUDD,
Consul-General.

VIENNA, *February 5, 1896.*

MILLENNIAL EXHIBITION AT BUDAPEST.

Hungary will celebrate this year the millennial anniversary of her foundation. The chosen representatives of the nation have decided to organize a series of festivities, in order to give foreign guests and other visitors a clear and comprehensive idea of the part played by Hungary in the historical events of the last ten centuries, and of her present position among civilized nations.

Festivities in commemoration of national heroes; an historical exhibition showing relics of great value and treasures of art and industry, methodically classified; an historical pageant, as well as numerous other symbolic acts and performances, will recall to the visitor's mind the foundation and vicissitudes of the State, revive the hard and weary struggles for Christian civilization and national independence, and furnish testimony to the great achievements of the Hungarian nation.

The general national exhibition is meant to set forth the moral and intellectual power of the Hungarian people. It is to comprise not only the agricultural and industrial products of the country, but the national character and faculties that reveal themselves in popular life and the progress made in every line of public instruction and development.

The millennial festivities will give occasion for the inauguration of newly erected public institutions, as well as for the meeting of international and national congresses, which are to be held by nearly one hundred different social groups, classes, and avocations..

The millennial festivities will commence on the 2d of May, 1896. On that day, the Millennial Exhibition will be inaugurated by the Emperor of Austria and King of Hungary, Francis Joseph I, in the presence of royal guests, the ambassadors, ministers, and consuls accredited to Austria-Hungary from all the civilized nations of the world, the members of both houses of the Hungarian Parliament, the Hungarian ministry, the members of the Austrian Parliament and ministry, deputations from the residence city of the King (Budapest) and of all the departments and municipal bodies of the country, and the representatives of all its scientific and literary societies and institutes of fine arts. On the following days, thanksgiving services will be held in all the churches of the country; all the municipal bodies, institutions; and societies will assemble at special meetings; gala performances will be given in the theaters, the performances at which will consist of dramas and operas which have been awarded first prizes; gymnastic and various sporting clubs will arrange races, regattas, and shooting matches, with valuable prizes. At the same time, an almost uninterrupted series of international congresses and other meetings will be held, accompanied by inaugurations of public buildings; while in various provincial towns and districts millennial art objects (memorials and historical paintings) will be exhibited, and charitable and other foundations created for the occasion will be inaugurated. The

Government will establish five hundred primary and technical schools in different parts of the country. In short, public life will represent a varied and vivid picture.

All these festivities will culminate in the anniversary of the king's coronation. On June 5, the royal insignia, viz, the holy crown, the purple mantle, and the sword and scepter, will be conveyed to the coronation chapel, there to remain in public view for three days. On June 8, the high dignitaries of the realm will proceed with the royal insignia to the royal castle, there to pay homage, in the name of the nation, to the bearer of the crown of St. Stephen. This procession will be headed by cavalcades arranged by the nobility of the country and by gala carriages occupied by the members of Parliament. The procession will defile before the King and then move to the new Parliament House. This monumental structure has been erected at a cost of 16,000,000 florins. Its inauguration will be solemnized by a millennial meeting of Parliament. After this, the members of both houses will proceed to the royal castle, there to renew to the King the oath of fidelity sworn to by their ancestors one thousand years ago at Pustaszar. As a continuation of this solemn act, the Arpad memorials will be erected at those seven points of the Hungarian frontier (Dévény, Zimony, Munkacs, etc.) which were occupied by Prince Arpad ten centuries ago on entering this country with his horsemen.

The official millennial festivities will be closed on the 27th of September by an act of international importance. The Emperor-King will on that day open for international traffic the new waterway called the "Iron Gate," which colossal work was commenced by Count Széchenyi and accomplished by Hungarian engineering art and capital. Finally, the last generation of the first millenium will erect as a memorial for generations to come a triumphal arch to hold the statues of all those great men who have helped to lead Hungary up to the heights of prosperity and power.

The series of official festivities will be diversified by those of a social and popular character. These will be the interparliamentary conference for international courts of arbitration; the congress of journalists, with the view to constitute an international journalistic union; international congresses of art and history, of actors, tourists, athletes, etc.; numerous national congresses embracing every intellectual and material interest of the country, in which the leading personages of all groups and branches of national production, the highest authorities in the field of commerce, industry, communication, etc., as well as those who are in the forefront of the literary, spiritual, and philanthropic movements of the country will take part.

There is activity in all classes of Hungarian society, with a view to carrying out the ingenious project of the artist Paul Vágó—the great historical pageant. Several municipal bodies have already promised their cooperation, while scores of men and women, bearers of historic names, have declared their readiness to take part at their own expense. All the costumes of all the races and social classes who have inhabited this country during ten cen-

turies will pass before our eyes in this beautiful cortege. The genius of the artist will call into life in their descendants the warriors who conquered Pannonia under Arpad, and, during the reign of Louis the Great, annexed to this realm all the neighboring countries; all the dignitaries, both civil and ecclesiastical, who, under Stephen the Saint, King Kálman, and Mathias Corvinus, spread Christianity, enlightenment, liberty, and wealth to the extreme confines of this part of Europe; all the crusaders of Joannes Hunyady, who drove back the Crescent for a century and thus defended western civilization against eastern fanaticism; all the kings, princes, noblemen, and poets of modern times who have led the nation in her struggle for modern ideas. These historical figures will be followed by their retainers or surrounded by the popular types of the respective epochs. To judge by the sketches of the artist, this pageant promises to surpass anything that has hitherto been offered on similar occasions.

All these festivals will move, as it were, within the fixed frame of the Millennial National Exhibition, which will cover an area of 500,000 square meters (5,382,100 square feet) and consist of 169 buildings and pavilions, erected at a total cost (including private expenses) of 10,000,000 florins (\$4,020,000). This exhibition is divided into two sections, viz:

(1) The historical section, containing art treasures, relics, and antiquities of the past, which will illustrate the political, religious, military, and private life of each principal period in the history of the nation. Francis Joseph I will figure as chief exhibitor, upon whose command the archives and treasuries of the dynasty will exhibit a collection of priceless value. The Sultan of Turkey will send relics of those of his predecessors on the Ottoman throne who materially influenced the destinies of Hungary. Italian, German, Polish, and Russian museums and collections have also promised to send valuable objects relating to Hungary; while the Hungarian clergy, the aristocracy, and the municipal bodies have voluntarily offered for exhibition all the relics and art treasures in their possession. Sketches, paintings, historical charts, imitations, etc., will fill up any gap that might be left in the picture of an epoch. These collections will be accommodated in a group of buildings, the architectural details of which are a reproduction of all the conspicuous parts of the monumental buildings of the country, thus presenting a general review of the history of Hungarian architecture. These groups of buildings, though of a temporary character, have required an outlay of 600,000 florins (\$241,200).

(2) The section of modern times will embrace everything offered by similar exhibitions. Nevertheless, the visitor's mind will here, too, be impressed with the solemnity of the millennium and the enthusiasm inspiring the nation at this momentous period of its history. The programme embraces the national life in all its manifestations. Not only will the present condition of Hungary be laid open to general view, but the world will also be impressed with the great progress Hungary has made since the reestablishment of her constitution in 1867, obliterating, in this comparatively short

time, the misfortunes and neglects of centuries. Besides individual exhibits, there will be exhibits illustrative of the army and navy; the public health institutions, with all their various apparatus; commerce, with its complicated organization; and, finally, the village and country people, with their manners of life and picturesque costumes, placed in a natural frame in the shape of some thirty dwelling houses used by the different races of the country.

EDWARD P. T. HAMMOND,

Consul.

BUDAPEST, *January 22, 1896.*

A correspondent, writing to the London Times, of January 20, 1896, describes the Hungarian Millennial Exhibition and its significance as follows:

Next summer will be a specially good opportunity to visit the country, for the millennial anniversary of the foundation of the Kingdom of Hungary—in itself a really interesting historical event—will be celebrated this year in many ways which specially echo to the hearts of its people. A new Parliament House will be inaugurated, new bridges will be thrown over the Danube, five hundred new schools created, and numerous fine public buildings and museums opened. But the monument which will be of most general importance in recording the millennium, since it may be said to appeal to the civilized world, will be the throwing open in May next of the great national exhibition in Budapest, which promises to be in every respect one of the most remarkable and interesting of the century. Its organization has been entirely in the hands of a national commission, which has been ably directed and presided over by the Hungarian Minister of Commerce, M. Daniel, who has undertaken a herculean task with a devotion, a zeal, and an ability which have brought about most significant results.

The aim and end of the great exhibition, which will be opened on May 2 by His Majesty the Emperor-King of Austria-Hungary, is to show to the world at large the intellectual and commercial condition of the Kingdom of Hungary both in past ages and at the present time, and among the exhibitors who will send collections of priceless value will be the Emperor-King, the Archdukes Joseph and Frederick, and all the noble families of Hungary, while the Sultan of Turkey will contribute many precious relics which have descended into his hands from those of his ancestors who have been so closely identified with Hungarian history in past ages.

The fêtes, festivals, and historical pageants which will take place within the walls of the exhibition will render it unique in interest, while the art treasures, both past and present, will fully illustrate the political, religious, military, and private life of each principal period in the history of the nation. The exhibition building, vast in dimensions, will vary in architectural design, and thus illustrate the periods which passed in order during the thousand years whose solemn memory it perpetuates.

The principal entrance, facing the Andrassy street, will be a fine construction in the shape of a triumphal arch. This is raised to perpetuate the memory of victorious heroes and men of genius whose names are dear to their country.

The exhibition itself will be divided into two sections—first, the historical section; second, the section of modern times. The national life of the people will be fully represented, and one of the exhibits which is likely to prove of far-reaching interest will be the presentation of a village of numerous dwelling houses, church, schools, official residences, etc., which will be inhabited by peasants of the varying nationalities of the country in their different picturesque costumes. During the period of the duration of the exhibition the social life of the peasants will continue uninterrupted, marriages will be celebrated, and fêtes held in the orthodox manner. This will give a singularly novel and interesting aspect to the scene.

I will conclude by saying that I am convinced that no one visiting the exhibition can fail to carry away a never-to-be-forgotten impression, for before their eyes will be illustrated fully the mode of life of a people who have preserved their freedom and independence for the glorious period of a thousand years.

BICYCLING IN GREECE.

There are, at the present day, about four hundred bicycles in Athens. They are mostly of English make, the "Raleigh" and "Quadrant" varieties being preferred. The average price at which a wheel sells here is 700 drachmas (1 franc=1.78 paper drachmas), or \$78.65. The average weight of the wheels used is 26 pounds. The character of the roads renders a lighter make impracticable unless of high grade and with a wide base. There are no bicycles manufactured in Greece, and the duty on imported bicycles is insignificant.

The history of bicycling in Greece is interesting. The first machine was brought here many years ago by the King. It was an all-wood affair, front driving, of the variety known as "Boneshaker." Naturally, His Majesty did not appear in public on this machine, as bicycles were regarded by the natives as supernatural and uncanny for many years. The pioneer bicyclists of Greece were subjected to many inconveniences and even dangers. They were hooted and laughed at even in the streets of Athens, and were sometimes stoned and tumbled from their wheels. At the present day, the rustic generally crosses himself and utters a prayer when a bicyclist passes him.

Bicycling may be said to have commenced here in earnest about eight years ago, with the founding of several clubs and its adoption as an amusement by leading Greeks. It is safe to predict a "craze" in the near future, as the royal family and many of the leading diplomats are now enthusiastic wheelers. The Crown Prince and the English, American, and German ministers, among others, may be seen on the streets every day mounted upon wheels. Such leadership has more weight in Greece than it would have in America.

Last year, one of the dealers here brought over five "Columbia" wheels from the United States. He had no difficulty in selling them immediately at 1,000 drachmas apiece. They were lighter than the English machine ordinarily used here, and were very much admired. Although there has since been a demand for the American wheel, the Athenian dealer has not been able to handle other "Columbias," as the firm about this time appointed a general agent in Germany and refused to supply him directly. The Athenian merchant says that he can not deal with this German agent, although his relations with the American firm were very satisfactory to all concerned. It seems a pity that some arrangement should not be made for supplying American wheels to Greece, as they are no doubt the best in the world and give most satisfaction here.

A German firm has recently opened here with a stock of cheap wheels. This firm is not meeting with the highest success, as people seem to be suspicious of articles of this nature of German manufacture. An American firm doing business here should place both a high-priced wheel and a good cheap one, the latter for boys and people of limited means, on the market.

The greater portion of Greece is passable for bicycles. Agreeable excursions can be made in one day from Athens to Phalerum, to the Piræus, to the King's property at Tatoi, to the beautiful villages of Marousi and Kephissia, to Marathon, to Thebes, and other places. Many longer excursions are possible; for example, there is a magnificent road skirting the sea all the way to Corinth. After stopping a day or two there to visit the ancient acropolis and other places of interest, one can continue the journey to Nauplia, the capital of Greece under Otho, taking in the ruins of Mycenæ, Argos, and Tyrins on the way. The scenery on such a trip is magnificent beyond description and the points touched at are of surpassing historical interest.

The climate of Greece is especially favorable for bicycling. There being a wet and dry season, one knows before starting what weather to expect. In summer, excursions are possible if one avoids the heat of the day, and in winter, the heavy rainstorms are sure to be followed by pleasant days. In spring, the climate is charming.

Bicycling will be an important feature of the Olympian games to be held in April, 1896. These games will, in themselves, give a great impetus to bicycling here, and their influence is already being felt. Great activity is noticeable among the various clubs in view of the coming event. American wheels should be represented at the Olympian games. Any of our manufacturers who will send a competent representative over to the games or before they take place will no doubt be able to make profitable arrangements. The firm that has sold the most wheels here is known as M. T. Sourmely & Philon, Athens. They express themselves to me as willing to handle a good American wheel.

GEORGE HORTON,

Consul.

ATHENS, *December 31, 1895.*

SHIPBUILDERS' STRIKE IN BELFAST.

The serious strike in the shipbuilding trades of this city, which began on the 11th of October, 1895, terminated on January 27, 1896, and on the following day the shipyards were opened and the men notified that they could return to work.

The terms upon which the strike ended were an advance of 24 cents per week over the wage received at the time of ceasing work. The new wage is \$8.03 per week of fifty-four hours. This advance extends to all members of the Amalgamated Engineers' Society and those trades associated with them,

viz, brass molders, finishers, machinists, etc., and is one-half of the increase demanded. While it is a compromise, it is also a victory for the workmen.

This strike has probably been one of the most disastrous that has happened in this community for many years. It is estimated that fully 12,000 workmen in the Belfast district were thrown out of employment. The vast sum which the maintenance of this large body of the community and their families required was withdrawn from distribution among all classes of shopkeepers, so that, indirectly, many hundreds, perhaps thousands, were seriously affected in addition to the strikers themselves. In certain sections of the city, where the families of the workmen reside, great distress prevailed; indeed, so extreme was the want and suffering of many families that public aid was necessary, and the distribution of bread, coal, and free meals was common.

One of the unfortunate features of the strike was the helpless position of the unskilled workmen. Their employment depended upon the employment of the artisans. They had no part in the strike and yet were the greatest sufferers; for, being unorganized, they were without funds and had to depend almost entirely upon public charity for a precarious and miserable subsistence. The families of many of this class were, if not quite, on the verge of starvation.

From the outset, the contention on both sides was of the most stubborn and determined character. The men in this district, though enduring great deprivation, resumed work under protest; but their executive council at London decreed that as the Clyde district men, who outnumbered the Belfast men three to one, were satisfied with the terms, the Belfast men must resume work, as their "strike pay" would be cut off at once. This strike pay amounted to \$3.65 per week. A married man received, in addition, 24 cents for his wife and 12 cents for each child.

A very conspicuous feature of the strike was the complete absence of all violence or illegal methods on the part of the men and the thorough discipline among them, obeying with alacrity all demands and orders from their chief officers, whose headquarters are at London. To this high standard of unity and peacefulness, determination and discipline, is largely ascribed their success.

The concession made by the employers was not unexpected in inside circles, for there were many uncontrollable circumstances transpiring which influenced their action. Among them was the large supply of work on hand, the alleged increase of orders for new work, the danger of skilled workmen scattering permanently to other localities, and, most potent of all, perhaps, pressure brought to bear through official sources, caused by the unsettled condition of the Kingdom's relations with other nations. The Government work at the private shipyards was not advanced, much to its dissatisfaction. All the conditions were important factors in favor of the workmen's demand.

Another conspicuous feature was the constant and earnest efforts of prominent personages to bring about a settlement of the difference. The lord

mayors of both Belfast and Glasgow were indefatigable in their labors; the Board of Trade, harbor commissioners, members of the town council, and ministers of the gospel all took an active part. Eventually, Lord James of Hereford, Attorney-General of the late Government, was prevailed upon to join in the work. His impartiality, ability, and energy made him very acceptable to both interests. He acted the part of peacemaker, doing much to bring the representatives of both sides to meet in conference, and, judiciously exercising the functions of mediator, adviser, and chairman, his services were invaluable. Each side presented their demands and concessions to him, and he communicated the same to the opposite side, at the same time making valuable suggestions and smoothing the way to overcome violent opposition. One of his methods in the earlier conferences was to keep each side separated from the other, he being the only communication between them. His reason for this course was that if they came together around the same table the discussions which would arise might become so violent, and perhaps personal, as to cause a dissolution of the meeting and indefinitely protract a settlement.

Below, I give a résumé of the main features of the strike from its inception to its termination.

The Amalgamated Society of Engineers embraces all the union men in England, Ireland, Scotland, and Wales. The Iron Molders' Society, of which the Belfast society is a branch, does not include Scotland, but does include England, Ireland, and Wales. The principal executive councils of both the Engineers' and Iron Molders' societies meet in London. These councils in no way suggested the strike in Belfast. Their approval, which was given, is necessary to entitle the workmen to receive "strike pay." The strike at the outset was purely local and voluntary. There has never been a standard of wages common to Belfast and other cities in Scotland or England. While the wages in Belfast are generally higher than those of the Clyde district, there are some cities in the Kingdom where the wages rank still higher.

In 1892, the Belfast employers reduced the wages of engineers, molders, pattern makers, blacksmiths, and all other allied trades 24 cents per week; the reason assigned was bad trade and scarcity of work. The men accepted the reduction without cavil. In July, 1893, notice was given that another reduction of 24 cents per week would have to be made; the same reason as given for the first reduction was offered. The operatives held several joint meetings and conferences, and, after a great deal of parleying, reluctantly submitted. The men say the only reason they submitted to it was the promise made to them that when trade improved wages would be restored to the former level. This statement is, however, denied by the employers, and there is no written record to prove or disprove it.

In August, 1895, the engineers and molders called upon the Belfast employers for the restoration of their wages as per promise, viz, an increase of 48 cents per week. They pointed out that the plentiful supply of work which had existed for some time, and which showed no sign of abatement, but

rather an increase, was sufficient proof that trade was good. The only promise elicited was that former wages would be restored upon a revival of trade. The men claimed the condition had been fulfilled; the employers denied it. The latter admitted there was an increase of business, but at no better prices; therefore, the rate of profits would not warrant an advance. At this juncture, the Belfast Employers' Association announced to the men that no alteration in wages could or would be made without the approval of the newly formed employers' association, known as the Federated Association, which had its center in Glasgow.

The fact should be noted that the shipbuilding employers of Belfast, anticipating trouble with their workmen, had succeeded in forming a union with the shipbuilders of the Clyde district for mutual offense and defense. This condition complicated the situation at Belfast, for at any time this union of employers decided that it was to their advantage to close the yards of the Clyde district, thereby throwing idle many thousands of workmen, and curtailing to a great extent the means of help to Belfast strikers, they would promptly do so.

On Friday, October 11, 1895, the engineers of the shipbuilding firms of Harland & Wolff and Workman, Clark & Co. and the engineering firms of Victor Coates & Co. and Combe, Barbour & Combe, all of Belfast, ceased work. They numbered some 700 engineers; but these figures do not indicate the number of men who were thrown idle. One thousand more belonging to the laboring class, which depended upon all departments running of the several establishments to which they were attached, were compelled to cease work. Pattern makers, brass finishers, and coppersmiths then followed. Gradually, all work was completely discontinued, and 12,000 workers in the Belfast district were out of employment and the circulation of at least \$80,000 per week in wages cut off.

After considerable effort and much parleying among the representatives of the contending interests in both the Belfast and Clyde districts as to a suitable place for holding the initial conference to settle the dispute, Carlisle was chosen, because on neutral ground, and the 20th of October the date. The meeting lasted seven hours. The result was, in brief, a promise of an additional farthing (half a cent) per hour, equal to 27 cents per week, to be given on March 1, provided the condition of trade would then warrant it. This the workmen regarded as no offer at all, because it was insufficient in amount and left the employers to be the sole judges whether or not trade warranted an increase. So the conference proved abortive.

In accordance with an agreement made between the members of the Employers' Association, the Clyde district employers proceeded to lock out the men by installments. The men excepted to this course by going out in a body.

After the Carlisle conference, several abortive attempts were made by the lord mayor of Belfast, the lord provost of Glasgow, and other influential officials to arrange a settlement. It was alleged that, in view of the

large number of war ships under contract by private firms, the Government had brought considerable pressure upon the employers to reach a settlement with the workmen. The strikers, however, seemed determined not to compromise. Their position was strengthened, no doubt, by the fact that the several organizations of skilled workmen had to their credit for strike or lockout emergencies between \$375,000 and \$425,000. Under their rules, members would receive from \$2.15 to \$4 per week, according to their wage and the organization to which they belonged.

Up to the latter part of November, the following Irish and Scotch shipbuilding firms had closed down; Messrs. Harland & Wolff and Workman, Clark & Co., of Belfast; D. W. Henderson and Patrick R. Napier & Sons, Finnieston; David Rowan & Son and the Fairfield Shipbuilding and Engineering Company, Govan; Muir & Houston, Kinning Park; Barclay, Curle & Co., Finnieston; Dunsmuir & Jackson, Govan; Scott & Co., Caird & Co., Rankin & Blackmore, and Kincaid & Co., Greenock; J. & G. Thomson, Clydebank; A. & J. Inglis, Point House; Ross & Duncan, Govan; Sir William Arrol & Co., Blackwood & Gordon, and D. J. Dunlop & Co., Port Glasgow.

In the early part of December, the employers made arrangements with the representatives of the employees for a conference to be held at Glasgow on December 10. Lord James of Hereford, a popular, influential, and impartial man, agreed, after much solicitation, to act as chairman. The Clyde and Belfast representatives of the employers consisted of five and three, respectively, while four from the Clyde and two from Belfast represented the men. The conference was conducted in strict secrecy, an official stenographer only being admitted. The conference sat the best part of two days. The following covers fully all that was made public:

It was at once determined that the proceedings should be conducted without representatives of the press. The chairman then made a short statement, dealing with no general matters, but defining the issues which, in his opinion, were to be determined and suggesting the mode of procedure to be pursued. It was agreed that the demand of the Belfast operatives should be presented in the first instance, which was done. The federated employers then presented their case in reply. The Clyde operatives' demand was next brought forward. The chairman then suggested that he and his colleagues should consult with the two representatives' bodies in separate rooms, and during the afternoon this course of procedure was carried into effect. The Belfast case was first discussed, but no final agreement upon all the terms in the controversy was arrived at, further consideration of them being postponed. The Clyde case was next taken up under the same conditions and was discussed at length. The propositions and counter propositions were:

We agree to recommend our Clyde men to resume work on condition that they receive an immediate advance of 1 farthing (half a cent) per hour all round, with a definite promise of a further advance of a second farthing per hour to all those who are in receipt of 7d. 1

farthing (14½ cents) or less per hour, to commence on the first pay day in April next, subject to the same conditions for alteration as those agreed upon for Belfast.

Such demands were declined by the employers' representatives, who made the following offers as to Belfast and Clyde operatives, respectively:

The employers offer an advance in wages of 1s. per week, such advance to commence on February 3 next and to remain undisturbed for a period of six months. After February 3, any subsequent alteration in such rate to be subject to one month's notice on either side. As to the Clyde operatives, the employers offer an advance of 1 farthing (half a cent) per hour (27 cents per week) to all operatives now receiving less than 7d. (14 cents) per hour, such advance to commence immediately; also, a further addition, after such advance has been made, of another farthing per hour all round, such latter advance to commence on February 3 next, subject to the same conditions of alterations as those proposed in the case of Belfast.

The operatives' representatives adhered to their demands as above stated and declined to recommend to the operatives whom they represented the offers made by the employers; but agreed to submit such offers to the decision by ballot of the operatives in Belfast and on the Clyde. In Belfast, the result was: For employers' proposal, 25; against, 879. The result in the Clyde district was similar, only the majority was not so large.

The shipbuilding trade for the nine months up to October 1 in Belfast was by no means below the average. The appended list of vessels launched during the year, together with tonnage, will give an idea of the amount of work turned out from the yards of Harland & Wolff (limited) and Workman, Clark & Co. (limited):

Names of steamers.	Description.	Port of registry.	Gross tonnage.	Indicated horsepower.
<i>Harland & Wolff.</i>				
Georgic	Steel twin screw	Liverpool	10,077	4,200
Victorian	Steel single screw	do	8,767	4,500
Armenian	do	do	8,765	4,500
American	Steel twin screw	do	8,196	2,700
Historian	Steel single screw	do	6,857	2,900
Cestrian	do	do	8,769	4,500
Vedamore	do	do	6,662	3,500
Germanic	Reengineed only	do		6,500
Doric	do	do		3,200
Total			58,093	36,500
<i>Workman, Clark & Co.</i>				
Star of New Zealand	Steel	Belfast	4,713	2,500
Mount Sirion	do	Glasgow	3,280	1,850
Mourne	do	Belfast	3,224	2,050
Statesman	do	Liverpool	6,322	3,400
Pakling	do	London	4,447	3,600
Arandeareg	do	Glasgow	3,213	1,750
Kintuck	do	London	4,447	3,600
Hyson	do	do	4,447	3,600
Langton Grange	do	do	5,825	2,750
Centaure	do	Liverpool	1,900	900
Charon	do	do	1,900	900
Total			43,723	26,900

During the latter part of December and through the early part of January nothing noteworthy was permitted to be made public of what was going on among the employers' and workmen's delegates toward settlement. Lord James of Hereford again offered his services, and a conference was called to meet at Carlisle on the 15th of January. The proceedings of this conference were kept very close, and all that was made known to the public was the agreement between the representatives of the two interests, which was as follows:

First. The employers agree to give the following advances immediately on work being simultaneously resumed in the shops of the associated employers of the upper and lower districts of the Clyde and Belfast: (1) To the Belfast operatives, 24 cents per week; (2) to the Clyde operatives, (a) an advance of half a cent per hour to all who, prior to the stoppage, were in receipt of less than 14 cents per hour, and (b) a further advance of half a cent per hour all round—that is to say, an advance of 1 cent per hour to all under 14 cents and half a cent per hour to all who earned at and above that rate.

Second. The rate of wages to remain in force undisturbed for a period of six months—from December 11, 1895, until June 11, 1896. After May 11, if any change is demanded, one month's notice to determine the arrangement may be given, the arrangement continuing in force during said month.

Third. The word "operatives" shall include the following classes of tradesmen on the Clyde and in Belfast, viz, fitters, finishers, turners, planers, borers, and slotters, and shall also include, so far as Belfast is concerned, any pattern makers, smiths, and brass finishers who are members of the Amalgamated Society of Engineers.

It was also agreed that this proposition be submitted to the workmen to decide by ballot whether to accept or not. The result of the vote in Glasgow and Greenock was: For employers' terms, 1,729; against, 465; majority for, 1,264. The result in Belfast was: For employers' terms, 147; against, 644; majority against, 497. The vote was taken in the several localities on the 18th of January.

The result of the ballot in Belfast was both a great surprise and great disappointment outside of the voters. The Clyde men, by an overwhelming majority, declared their willingness to accept the proffered terms, the numbers affected being three times that of the Belfast strikers; yet, by the compact of the employers, the refusal of Belfast district nullified the consent of the Clyde men to resume work. Naturally, the result of the Belfast vote caused great irritation and disappointment in the Clyde district.

The executive council of the Amalgamated Engineers, at London, on hearing the result of the ballot, announced to both Clyde and Belfast men that the time had come when the strike must be brought to an end. If the men refused to accept the terms offered, the council would cut off the "strike pay."

At a subsequent meeting, the Belfast workmen, under protest, resolved to accept the terms, and on January 27 notices were posted on the gates of the several shipbuilding yards that work would be resumed that morning at 9 o'clock. By the 29th, all minor differences were settled and all branches of the trades recently on strike were in full operation.

JAMES B. TANEY,

BELFAST, *February 1, 1896.*

Consul.

PLAGUE OF MICE IN RUSSIA.

During the years 1893-94, and extending into 1895, the agricultural interests of Russia suffered serious loss, owing to the destruction, by numerous varieties of mice, of the growing crops, as well as grain in stacks. The extraordinary number of these mice, the great destruction caused by them, and the efforts made to exterminate them are best indicated by quoting the answers to my request for information from the authorities of five of the most important agricultural districts within the range of this consular district.

The governor of Bessarabia writes :

(1) The large number of mice which appeared in the autumn of the year 1893 in the south of Russia embraced the following well-known species: *Mus musculus* (house mice), *Mus agrarius* (field mice), and *Arvicola arvalis* (also called field mice), but *Mus musculus* predominated.

(2) The extraordinary rapid multiplication of this army of rodents is attributed to two consecutive good harvests, in consequence of which much grain remained in stacks unthrashed, and to the autumn of 1893 having been very mild.

(3) The mice multiplied on the spot and no migration was observed, which is also corroborated by their simultaneous appearance in Bessarabia and in the adjoining provinces.

(4) The mice appeared in the autumn of 1893 and attained their largest numbers in the autumn of 1894, after which they began to decrease, so that in the spring of 1895 no further complaints regarding them were heard. The damage caused by them is considerable, but has not been exactly ascertained, because there was nothing to go by.

(5) No particularly energetic measures were taken against the mice, because no thoroughly satisfactory means of combatting them had been discovered. Among the various measures adopted, mention must be made of holes in the ground as mouse traps and of other traps. Among the poisons used were phosphor lozenges and grain poisoned with strychnine or with arsenic. As regards their infection by means of bacteria diseases, experiments were only made with the cultivation of the germs of Loeffler, Lazare, and Merezhkovski, the last named giving the best results, while the cultivation of Loeffler and Lazare were found to be unsatisfactory, because the first gives a large percentage of immunities and the second is fraught with danger to sheep. The mice eventually perished from epidemics which had sprung up among them, to which they are very liable, and they were partly destroyed by various animals of prey.

The secretary of the rural administration of the government of Cherson writes as follows :

(1) It was particularly noticed that field mice had multiplied and that the number of house mice had largely increased.

(2) The warm winter had without doubt favored their propagation, but probably the main cause consisted in the large quantity of cereals which had remained all over the province, in the shape of thrashed grain as well as in stacks.

(3) It is also certain that the mice increased on the spot, but, according to the observations of some landowners, the mice were noticed to move from east to west. This gives reason to believe that they immigrated from neighboring provinces and occupied the territory of the entire province.

(4) The reports regarding the extraordinary increase of the mice date from the spring of 1894, but its commencement dates back to the autumn of 1893. Of late, the mice perish

from some disease which is not defined as yet, but to determine its nature certain measures have been taken by the department of agriculture. It is not possible to estimate the extent of damage caused by mice; all the more so, because they are accompanied by rats, which not only devour grain and other produce, but even destroy village buildings.

(5) Up to the present, the population have used various domestic remedies for the extermination of the mice, besides which, with the assistance of the rural administration, it was determined to poison the mice with Professor Loeffler's cultivations of *Typhus murium*, as prepared by the Odessa bacteriological station and the Cherson bacteriological laboratory. This cultivation of *Typhus murium* shows its effect upon the numbers of mice not sooner than three to four weeks after its use. In June, 1894, the Department of Agriculture sent to the Province of Cherson, Dr. Merezhkovski, the assistant of the manager of the bacteriological laboratory of the department, to carry out experiments of exterminating the mice by means of the cultivation of the bacillus discovered by him. The experiments carried out by him in the agricultural school of the Cherson rural administration gave good results, and in October, they were extended to the estate of G. L. Skadovski, a landowner, where they were superintended by a special committee; on the sixth day, the mice began to perish of the cultivation of Dr. Merezhkovski, and on the ninth day, this attained considerable dimensions and the mice were reduced to their normal number. In April, 1895, the department sent out bouillon with the cultivation of Dr. Merezhkovski, but there are no reports as yet to hand concerning the results.

From the Slavenoserbsk district, in the government of Ekaterinoslav, the following information was received:

The mice, which appeared at the end of 1892, were of three species—the usual small house mice, the rather large field mice, and a heretofore not noticed variety having quite sharp noses. The cause of the appearance is not known. The mice increased on the spot and also came from neighboring places. They remained long on the spot, and they also shifted to other places; they ate up large quantities of grain in stacks, thrashed grain, and also flour; they gnawed up straw and bags, and did much damage to the winter and spring crops. No special measures were taken to destroy these mice beyond using traps and mineral poisons. They continued with us during the years 1893 and 1894, disappearing in the spring of 1895, apparently perishing from some peculiar disease, which was no doubt aggravated by the winter having been very cold and without snow. During the latter part of the year 1894, many cats died after eating a number of these mice. It was noticed particularly that cats died very soon after eating a mouse of the variety with pointed noses.

From the Pavlograd district, in the government of Ekaterinoslav, under date of August 16, 1895, the following was received:

The mice, which had multiplied during the two preceding years, were the usual field mice which had migrated into the Pavlograd district from the adjoining districts of the provinces of Poltava and Kharkov. These mice continued to increase in large numbers during the years 1893 and 1894. The damage caused to the fields by them was not very great, but grain in stacks and in warehouses suffered severely. The administration took no measures against the mice, but the population destroyed them as far as was possible by means of traps and poisons. In view of the very rapid increase, those measures did not perceptibly affect their numbers. The cause which led to the eventual destruction of the mice is unknown.

An interesting communication from the secretary of the rural administration of the Province of Taurida (Crimea) gives the following information:

(1) These varieties of mice appeared in large quantities within the limits of the Province of Taurida—on the fields and the steppe, the common field mouse (*Arricola arvalis*); in the gardens, tree plantations, and straw stacks near the habitations of man, the wood mouse (*Mus*

syvaticus); within the houses, cellars, stores, pens, etc., the gray rat (*Mus decumanus*) and the house mouse (*Mus musculus*). All these varieties are natives of the local fauna.

(2) The common cause which called forth the multiplication in masses of these mice over an enormous extent of territory in Russia, probably lies in the periodical repetition, at certain intervals of time, of one and the same conditions in nature; in particular, the multiplication of the mice was favored by the warm autumns and winters of the years 1893 and 1894, the extermination of birds of prey and of the smaller carnivorous animals; also, the grain left a long time in fields gave abundant food to the mice.

(3) In the Province of Taurida, migrations of mice were only observed over small areas, while in Siberia, bodies of field mice were moving along over large areas, and along their road they ate up all grass vegetation. According to the information collected by the naturalist attached to the administration of this province, the territory infected with the mice is very large; the northern limit of the territory, on which the mice appeared in large numbers, for instance, extends from the town of Keltse, over Sedlets, Chernigov, Vitebsk, Smolensk, Kazan, over the Province of Perm and passes for away into Siberia.

(4) The invasion by mice has already lasted two years, being particularly felt during the autumn months. The extent of damage caused by them is difficult to calculate, but instances of destruction of winter crops and of grain placed in stacks are by no means rare.

(5) In the fight against the mice, the latest methods of inoculating the bacilli of Professor Loeffler and Dr. Merezkovski were employed. Those means produce among the mice infectious diseases. The inoculations were attempted only on a limited area, and, in the cases where the bacilli of Merezkovski were employed, gave satisfactory results.

The following are extracts from a letter received from the rural administration of the district of Novomaskovsk, in the government of Ekaterinoslav:

During the visitation of mice in vast numbers in this district in 1894-95, three species predominated—the common house mouse, the field mouse (which was the most numerous), and a third variety with pointed nose. The latter variety were smaller in size than the house mouse and of a lighter color, having, according to the observations made in some localities of the district, a yellow color, with a black stripe along the back, and was specially noticed for its irascibility. The opinion prevails here that these mice migrated into this district from surrounding localities, as was the case some twelve or fourteen years ago, when they were moving along en masse from the south to the western provinces. The peasantry are of the opinion that the mice undertake such migrations under foreboding of impending failure of crops in those localities where they originated. The mice not only caused considerable damage to the grain, straw, hay, and kitchen gardens, but to other property as well. The grain was destroyed while in stacks, as well as when in stores and winter crops. Such unusual numbers of mice and the damage caused by them approximated about half the area of this district, so that, while in some districts, the increase of mice was not very great, in others their increase was enormous in the fields, farmyards, gardens, dwelling houses, and other buildings, and even in wells and on rivers to such an extent that the population of that locality discontinued the use of fish as food, especially pike, because it was discovered that they contained mice. The aggregate damage inflicted by the mice attained considerable dimensions. Besides grain devoured and spoiled, heavy losses were caused through the damaging of clothing, yarn, and of buildings, which were undermined along the floors, walls, and ceilings. The boldness of the mice is shown in the fact that they not only gnawed the wool from animals and the hair from the heads of people who were sleeping, but there were even instances of open attacks on men engaged in labor on the thrashing floors.

The numerous stories of how this army of mice swarmed all over country houses and village dwellings and the indifference to their presence shown by

both cats and dogs and their absolute refusal to molest them would form a chapter more sensational, perhaps, than instructive. An incident which came under my own personal observation is not without interest. While I was waiting for a train at a small station on a branch line of the Southwestern Railway, a clergyman, with very long hair and beard, who was walking up and down the platform, stopped for a moment and raised the end of a canvas which served as a cover for a large quantity of wheat which was awaiting shipment. In an instant, a mass of mice sprang at him and his beard, hair, and cloak were literally alive with them. To brush them off was a matter of some time, and when my fellow traveler at length thought himself free, he was dismayed to find a mouse in each of his trousers pockets.

BACILLUS AND ITS CULTURE.

Doubtless, our bacteriologists at the Department of Agriculture are familiar with the experiments of Loeffler, Lazare, and Merezhkovski; but it may not be amiss for me to mention that, besides certain morphological distinctions, the differences between the bacillus *Typhi murium* of Loeffler and the bacillus derived from mice by Merezhkovski consist, according to the statements of Merezhkovski, mainly in this, that the mice die sooner when infected with Merezhkovski's bacillus than with that of Loeffler. Experiments with the infection of mice by means of Merezhkovski's bacillus were carried out by himself in his laboratory; there are no particulars in literature concerning experiments in fields with his bacillus. As regards the bacillus *Typhi murium* of Loeffler, besides the experiments of exterminating mice in the fields carried out by Loeffler himself in Greece, similar experiments were made by several Russian laboratories—among others, by that of the Odessa bacteriological station in the provinces of Cherson and Podolia. These experiments were made in the fields and in the places where there was grain in stacks, and gave very satisfactory results. These cultures of Loeffler's bacteria are customarily sent out in testing tubes or agar-agar, where they can retain their vitality during the course of several months. The contagion of *Typhus murium* presents itself in the shape of a gray film on the slanting surface of the jelly in the testing tubes. For the purpose of using it, the film must be mixed with water in which pieces of white bread are soaked; the transparent remainder of the contents of the testing tube must be distributed, together with the pieces of bread, in the localities where the mice prevail. The details of this manipulation for preparing the contagion are as follows:

(1) A 0.5 per cent solution of table salt in water (one teaspoonful of salt is taken for five glasses of water) is prepared by boiling it for twenty minutes and subsequent cooling.

(2) The testing tubes are filled with this water to one-half, the film is carefully scraped off by means of a little stick, and the liquid contents of the testing tube are poured out into the prepared solution; to five glasses of water, three testing tubes are taken.

(3) In the liquid thus obtained, pieces of bread are soaked and distributed over the places indicated. The mixed contagion must be used immediately. Before using the cultures, it is indispensable to test their virulence on mice, and in the event of their proving to have been weakened, to make them stronger by means of passing them several times through mice.

THOS. E. HEENAN,

Consul.

ODESSA, *January 2, 1896.*

NOTES.

The German Seed Crop in 1895.—The vegetable and flower seed crop of this year in Germany, says Commercial Agent Moore, of Weimar, under date of December 16, 1895, may be regarded, on the whole, as a good one, owing principally to the continuance of dry, warm weather at the end of the summer and beginning of autumn. The crop is certainly vastly superior to that of 1894, which suffered from the too frequent rains of August and September and was both inferior in quality and quantity. For instance, asters, a German specialty, gave scarcely any produce, the flower ripening late in the season, while this year's crop of the same flower is faultless. A consequence of the good seed crop this year is noticeable in the decline in prices all along the line; in some instances, the decline has been so great that certain seeds are selling at prices varying from one-half to one-third of last year's average. No estimate of the quantity of this year's crop can be given at this early date.

Germany has two centers for the seed trade. The one is Quedlinburg and the other is Erfurt. It is in the former town that the prices are made.

The leading exporters and dealers in seeds in Germany grow comparatively few of the seeds they sell and export. Only 1 to 2 per cent of the quantity of seeds they handle is estimated to be of their own growing, the fields surrounding their establishments being, in many instances, more for ornamental purposes than for the cultivation of seeds for the market.

Flower and vegetable seeds are mostly grown in the fertile lands of Thuringia, the Magdeburg and Nuremberg-Ulm regions, and in Wurtemberg. Forest and grass seeds are grown in Thuringia and on the Main; clover and kindred seeds are from Silesia.

Exotic seeds and dried grasses are imported into Germany in large quantities and thence exported; the latter, which are imported on an extensive scale, are dyed and sold for decorative purposes.

The cultivation of flowers for their seeds is carried on in two ways in Germany:

(1) The *Handelsgärtner* (merchant seed man) selects the choicest of the seeds grown on his own land under his personal supervision; these are given to a cultivator to grow, the *Handelsgärtner* contracting to buy the entire crop when ripe. The price is not fixed until the crop is in a state of maturity.

(2) The cultivator grows such seeds as he thinks he can find a good market for. Intending buyers come and inspect his crops in the autumn while they are in bloom, and the seeds are offered to the buyer at such prices as the cultivator has already determined upon.

There are in Germany about thirty-six Samen-Control-Stationen (seed-inspection stations), which undertake to examine for a moderate fee such seeds as may be submitted to them. They value them as to their purity, genuineness, and germinating qualities.

The exports of seeds to the United States from Germany during the years 1893 and 1894, according to the official statistics of the German Empire, were: In 1893, clover seed, 887,200 kilograms;* hemp seed, 91,800 kilograms; all other seeds, 131,300 kilograms. In 1894, clover seed, 29,200 kilograms; all other seeds, 501,800 kilograms.

From the Weimar consular district during the same periods the values of seeds and plants exported to the United States were \$76,007.61 and \$62,-905.18, respectively.

The value of seeds and plants exported during this calendar year to date have reached \$64,475.61, and, in spite of the cheapness of the crop, surpassed in value last year's shipments.

Belgian Harvest of 1895.—The Belgian Monitor, says Consul Morris, of Ghent, in a report dated January 16, 1896, has just published the crop statistics of 1895. According to the tables, the year 1895 must be considered good for crops in general. The harvest of wheat and barley equaled that of the preceding year, and the quantity of rye and oats was less. The quality of all the cereals was good. The average yield per acre of the principal cereals for the last five years is given in the following table:

Year.	Wheat.	Rye.	Barley.	Oats.
	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>
1891.....	24.1	23.4	35	48.2
1892.....	30.7	32.4	43.3	44
1893.....	26.4	29.8	33.3	32.7
1894.....	29.8	33.3	37.9	46.7
1895.....	29.4	30.2	40.8	42.5

Granted that the acreage of wheat and rye has remained stationary since the last agricultural census (about 1,360,000 acres), the total product of these cereals may be approximately estimated at 40,580,000 bushels, or about 2,000,000 bushels less than in 1894. Not considering, on the one hand, the crops of meslin and buckwheat, nor, on the other, the quantities required for agricultural industries as well as for sowing purposes, the deficit in the harvest of alimentary cereals in 1895 may be estimated at 11,350,000 bushels.

The potato harvest was above the average in quantity, there being 14,613 pounds per acre; in 1892, the crop was 18,200 pounds; in 1893, 16,328 pounds; in 1894, 10,947 pounds. The quality was reported as good in all the provinces; in some, very good.

* 1 kilogram = 2.2046 pounds.

Hay yielded at the first mowing 4,461 pounds per acre, but was without value afterwards. Beets for fodder yielded 34,438 pounds per acre, about as much as in 1893 (32,378 pounds), but nearly 8,000 pounds less than in 1894 (42,560 pounds). Turnips are reported as bad, both as to quality and quantity, being 10,885 pounds per acre. Carrots gave a fine crop of 18,736 pounds per acre. Flax was good in quality, but the yield was less than a good average crop (562 pounds per acre). The sugar beet, good in saccharine quality, only yielded 24,980 pounds per acre, or considerably less than for the preceding year, when it was 28,550 pounds per acre.

Crops and Traffic of the Island of Jersey.—Consular Agent Renouf reports from Jersey, England, December 31, 1895:

The potato crop of 1895 was below that of 1894. In 1894, the exports amounted to 60,605 tons, which realized £462,895 10s. 5d. (\$2,252,681.05); this year, the exports were 54,290 tons and realized £359,989 4s. 6d. (\$1,751,887.56). I have not seen the returns of the British Agricultural Department with regard to the land under potato cultivation for these years, and there are no local statistics to which I am able to refer; but, on inquiry, I am informed that, generally speaking, the acreage is the same.

The amount of artificial manures and fertilizers consumed in this culture is estimated at £40,000 (\$194,660). In previous reports, I have dwelt upon this item of local trade, as I think there is in this respect an opening for United States shippers.

Potato culture has become so general that small attention is given to the growing of cereals. When the land is cleared of potatoes, toward the end of July, the root crop is then attended to. Owing to the severe drought, the crop this autumn was below the average.

The competition which is going on between the English railway companies for passenger traffic has been productive of great benefits to the island. The means of communication with England—through Southampton, Weymouth, and Plymouth—have been considerably improved and made more comfortable, so that there need be no hesitation on the part of travelers about visiting the island. I may add that since the American line has established itself at Southampton, the number of American visitors to Jersey has increased. In 1894, there were 48,568 arrivals from English and French ports, and in 1895, there were 55,867. The fine weather which prevailed during the summer months and the inducements offered by the railway companies to tourists will, in a great measure, account for this increase.

During the autumn months, a few cases of smallpox appeared. The authorities dealt with the matter energetically, and, at the present time, the island is free from this disease. The deaths were few.

I am quite unable to give an estimate of the amount and nature of goods imported into this island from the United States, as there is no direct communication with American ports.

Cotton and Cotton-Goods Trade of Japan.—Under date of Singapore, December 23, 1895, Consul-General Pratt writes:

I have obtained, through the Japanese consulate here, particulars as to the quantity and value, in Mexican dollars, of raw cottons imported from different countries into Japan during 1894, which, having arranged in tabulated form, with a statement of the value of Japan's imports

and exports of cotton goods and yarns for the same period, I have the honor to submit herewith for the benefit of cotton exporters and manufacturers in the United States:

Imported into Japan from—	Raw cotton.			Seed cotton (cotton on seeds).		
	Quantity.		Declared value.	Quantity.		Declared value.
	<i>Catties.</i>	<i>Pounds.</i>		<i>Catties.</i>	<i>Pounds.</i>	
United States.....	12,036,816	16,075,754	\$2,680,671.32			
British India.....	42,354,246	56,472,328	7,846,589.47			
China.....	51,782,548	69,043,397	8,120,417.36	10,356,433	13,808,577	\$441,518.10
French India.....	1,119,252	1,492,336	233,028.56	1,144,839	1,526,452	64,646.44
Other countries.....	1,101,747	1,468,996	223,216.27	14,304	19,072	673.00
Total.....	108,414,609	144,552,811	19,103,922.98	11,515,576	15,354,101	506,837.54

The total import of cotton goods and yarns in 1894 was \$10,415,970.58 (Mexican); the total export for the same period, \$2,950,280.36 (Mexican).

Exports of Sulphur from Sicily.—Consul Seymour, of Palermo, reports, January 22, 1896, that during the year 1895, there were exported from Sicily 347,113 tons of sulphur, of which 99,034 tons went to the United States. During the preceding year, 345,417 tons were exported, of which 105,024 tons went to the United States. The stock on hand on December 31, 1895, amounted to 211,207 tons, against 207,763 tons on the corresponding day of the preceding year. "It is interesting," adds Mr. Seymour, "to note that recently a vessel carrying 3,250 tons of sulphur left Girgenti, in this consular district, direct for San Francisco. This is said to be the first shipment of sulphur from Sicily to the Pacific Coast of the United States in ten years. One or more, if not all, of the three following factors probably influenced the shipment: Cheapness of Sicilian sulphur, cheapness of freight (\$3.60 per ton), and insufficient output of Japanese mines to supply the demand."

Sulphate of Ammonia as a Fertilizer.—According to a report from Consul Seymour, of Palermo, dated January 23, 1896, experiments made in that consular district with sulphate of ammonia as a fertilizer for the citrus and the vine have proved very satisfactory, the results being a good healthy growth imparted to the plant, uniting with the increase of fruitage an improvement in quality. The best results are obtained by mixing the sulphate of ammonia with the natural fertilizers.

Purity of American Grain.—Consul Stephan, of Annaberg, reports, February 11, 1896, that "several months ago, the agrarian circles of this country were delighted by the news that Professor Heinrich, in Rostock, had found numerous bacteria in Russian and Roumanian grain, which were the more

deadly as they could not be rendered harmless even by the heat of the oven. They hoped that the importation of this grain would now be prohibited in the same manner as American cattle and meat were excluded not long ago on account of alleged Texas fever. In nonagrarian circles, the discovery was looked upon as a hoax, for, it was said, the dangerous nature of the grain would long before have been shown by diseases and numerous deaths among consumers. The agrarian member of Parliament, Herr Meno Rettich, of Rostock, has, however, brought this question before the Reichstag, and has there been informed by the director of the public health office that sixteen German and seventeen foreign samples of grain were examined by this institution as to impurity from bacteria. The purest was the American; then came Moravian, Bohemian, and Hungarian barley. The most impure was Turkish rye. In 1 gram of German wheat, 14,000 to 230,000 bacteria were found; in Russian, 256,000 to 309,000; in La Plata wheat, only 5,000. A sample which showed 859,000 bacteria in Rostock, showed, fourteen days later in Berlin, only 150,000, so rapidly does the germ disappear. As regards the character of these bacteria, such as would endanger health were not found in a single sample, so that the grain is absolutely harmless. But even the worst bacteria are destroyed by the heat of the oven. It remains now for our agrarian friends in Germany to form joint-stock companies for the importation of American and La Plata wheat and to make active efforts for the repeal of the duty now laid upon it."

Increased Duty on Cigarettes in Chile.—Minister Strobel, in a dispatch from Santiago, February 1, 1896, informs the Department of the passage of an act by the Chilean Congress, dated January 24, 1896, raising the duty on cigarettes to 5.50 pesos per kilogram. The present duty is 1.50 pesos per kilogram on Habana cigarettes and 1 peso per kilogram on others. "It is to be remembered," adds Mr. Strobel, "that the Chilean peso is now equivalent to 18d."

[Translation.]

ARTICLE 1. The import duty per kilogram on cigarettes is raised to 5.50 pesos per kilogram, inclusive of the weight of the wrappers.

ART. 2. This law shall take effect fifty days after its publication in the *Diario Oficial*.

Purchase of Street Railways in Mexico by United States Capitalists.—Consul-General Crittenden, writing from the city of Mexico, March 9, 1896, announces the purchase by United States capitalists of the entire street-railway systems of that city, comprising the sole right of way of the desirable streets of the city, together with the following mileage and equipment: One hundred miles of broad-gauge track, 60 miles of narrow-gauge track, 5 locomotives, 300 passenger cars, 80 freight cars (with privilege of carrying all classes of freight), 40 carts, 2,600 mules and horses, and 30 funeral cars. The

number of passengers carried in 1895 was 17,480,425, at fares ranging from 6 to 31 cents per passenger; number of employees at present, 2,100; average wages paid conductors, drivers, and collectors, from 50 cents to \$1 (Mexican currency) per day. The parent road has always paid a dividend of from 6 to 7 per cent since organization, besides putting aside sufficient surplus out of its earnings to enable it to purchase all competing lines, except one small and undesirable single-track road of about 4 miles in length.

The first buyer is Mr. Channing F. Meek, of 837 Broadway, New York, who has sold the lines to Mr. Henry A. Butters, of San Francisco, Cal., and Johannesburg, South Africa. The transaction, including the contemplated reequipment and improvement of the lines, will involve about \$20,000,000 (silver); but the actual purchase price is stated at \$7,750,000.

It is stated that the present company will continue to operate the system on account of the purchasers until the second payment of \$825,000 has been made.

Messrs. Meek and Butters are quoted in a newspaper as saying:

It is our intention to equip the lines with electricity, or, at least, to make a very exhaustive experiment with electric traction. We are negotiating for very extensive water powers, and, among others, have secured an option on Mr. Espinosa's concession for the utilization of the discharge from the drainage tunnel, which, it is estimated, will yield 6,000 horsepower. That would not only give us enough energy to operate our system, but a substantial surplus to sell to power users. Our consulting engineers are Mr. William Page, of London, and Mr. T. W. Orbison, of the firm of O'Keefe & Orbison, of Appleton, Wis. It is our intention thoroughly to revolutionize the service, especially in the direction of accommodating the city traffic in a more adequate and satisfactory manner. At present, the city traffic is more or less sacrificed to the suburban. On some of the city lines, there will be a three-minute service, but in no case will the interval exceed five minutes. Few people can realize what a first-class electric street-car service will do for this city. It will revolutionize conditions here, and convert Mexico into a thoroughly modern capital. Naturally, it will take some time to introduce these changes. The system is an extensive one, and its requirements and capacity will have to be thoroughly studied. But the improvements will be made as rapidly as is consistent with safety and good business principles.

American Clothing in England.—Consul Meeker, of Bradford, in a report dated March 6, 1896, says:

While on a trip to New York last autumn, a Bradford manufacturer became much impressed with the quality, cut, style, and finish of American ready-made clothing. He purchased for \$18 at a clothing store in New York city, a light, fancy worsted suit, which he wore on his return and exhibited to his friends as an evidence that the Americans turn out the "smartest" and best ready-made suits in the world. He conceived the idea of trying to introduce such clothing here, and, as a beginning, brought over some sample children's suitings, in which he sought to interest the leading ready-made wholesale clothiers of Leeds and Bradford. While the American suits were greatly admired on account of the good workmanship and style, the effort was not entirely successful, the price alone being at fault. One "junior" suit, New York price \$1.15, could be purchased in Leeds at wholesale for 3s., a difference in favor of the Leeds article (acknowledged to be not quite so stylish) of 43 cents. One child's suit, New York price \$1.62, could be purchased here for 6s., a difference of 18

cents. Another child's suit of similar class figured out exactly the same difference. One boy's suit, New York price \$3.50, sold here for 12s. 6d., a difference in favor of the English suit of 50 cents. One pair of knee pants, New York price \$4.12 per dozen, was cheaper than the English at 1s. 6d. per pair, or \$4.32 per dozen, a difference in favor of the American article of 20 cents per dozen.

In parallel columns, the showing would be as appended:

Description.	New York price.	English price.
1 junior suit.....	\$1.15	3 0
1 child's suit.....	1.62	6 0
Do.....	1.62	6 0
1 boy's suit.....	3.50	12 6
1 dozen knee pants.....	4.12	18 0

These quotations on both sides were net cash wholesale prices.

The gentleman who instituted this inquiry said that while the United States article was worth the difference in price, there was just enough difference to make it a hazardous undertaking to attempt to introduce them here.

Labor Disturbances in St. Kitts.—United States Commercial Agent Moore, of St. Christopher, or St. Kitts, one of the British West India islands of the Leeward group, about 46 miles WNW. of Antigua, informs the Department of State, under date of February 24, that at the harvesting of the sugar crop about six weeks ago, the laborers of the estates struck for higher wages, their pay having been reduced last year on account of the low price of sugar and the shortness of the crop. The strikers set fire to the canes on the estates whose proprietors refused to accede to their demands, and, night after night, cane fields were destroyed. Finally, a general increase of wages was granted, but this did not satisfy them, and a further increase was demanded. This was not given, and the burning of the cane fields continued. On the 17th of February, the boatmen struck and refused to permit small boats to go off to vessels in the harbor. Gangs of laborers from the estates joined them, "marching in on the town from the country round, armed with sticks and stones, to the music of their native tunes." In the evening, a mob appeared in the streets, smashing windows and street lamps, and, later, looted provision stores and saloons. Fortunately, H. M. S. *Cordelia* had just arrived in the harbor on a tour of inspection and a force of marines and blue jackets was landed. After a skirmish, in which "three of the black rioters were killed and several wounded," partial order was restored. The value of goods taken or destroyed by the mob is estimated at \$5,000. Several attempts were made to fire the town, but the marines extinguished the flames. Commercial Agent Moore adds: "The governor was telegraphed for and arrived the following day from Antigua, and it was decided that the war ship should remain for the present, as the island certainly would not be safe without some protection, for the blacks are still going around making threats to

burn the town and murder the white people at the first opportunity. The island is now under martial law and no one is allowed out after sunset." Mr. Moore expresses the opinion that the worst is over.

Consular Reports Reprinted Abroad.—The British Board of Trade Journal for March, 1896, reprints, in whole or in part, the following reports published in the United States CONSULAR REPORTS: "Iron industry of Russia," by Consul T. M. Stephan, of Annaberg, CONSULAR REPORTS No. 185 (February, 1896), p. 238; "German emigrants as trade agents" and "Commercial union of Saxony," by J. C. Monaghan, of Chemnitz, CONSULAR REPORTS No. 184 (January, 1896), p. 119; "European sewing thread in China," extracts from a report of the Austro-Hungarian consul-general at Shanghai, transmitted by Consul Stephan, of Annaberg, CONSULAR REPORTS No. 184 (January, 1896), p. 85.

Consular Reports Transmitted to Other Departments.—The following reports (originals or copies) were transmitted during the month of March to other Departments for publication or for proper action thereon:

Consular officer reporting.	Date.	Subject.	Department to which referred.
Robert J. Kirk, Copenhagen....	Feb. 15, 1896	Extermination of cockchafers in Denmark.	Department of Agriculture.
Do.....	.....do.....	Agriculture of Denmark.....	Do.
E. P. T. Hammond, Budapest.	Feb. 7, 1896	Cattle diseases.....	Do.
E. Schneegans, Saigon.....	Jan. 25, 1896	Rice.....	Do.
Do.....	Feb. 8, 1896	.....do.....	Do.
E. L. Baker, Buenos Ayres.....	Jan. 24, 1896	Argentine Republic.....	Do.
Do.....	Dec. 8, 1895	Sheep scab and sheep dips in Argentine Republic.	Do.
W. I. Buchanan (minister), Buenos Ayres.	Jan. 2, 1896	Flour-milling industry of Argentine Republic.	Do.
William H. Seymour, Palermo.	Jan. 23, 1896	Sulphate of ammonia as a fertilizer.	Do.
T. M. Stephan, Annaberg.....	Feb. 11, 1896	Purity of American grain.....	Do.
H. C. Morris, Ghent.....	Jan. 16, 1896	Belgian harvest of 1895.....	Do.
E. B. Renouf, Jersey.....	Dec. 31, 1895	Crops and traffic of the island of Jersey.	Do.
Thomas E. Moore, Weimar.....	Dec. 16, 1895	The German seed crop in 1895.....	Do.
C. W. Chancellor, Havre.....	Jan. 7, 1896	Inoculation for diphtheria.....	Marine Hospital Service.

FOREIGN REPORTS AND PUBLICATIONS.

Growth of German Commerce in British Colonies.—The Review of Foreign Commerce (*Revue du Commerce Extérieur*), of Paris, in its issue of February 22, 1896, prints an interesting article on the growth of German commerce in the colonies of Great Britain. "The outbreak of political antagonism between Great Britain and the German Empire," it says, "is an unlooked-for phenomenon, the causes of which appear inexplicable. European statesmen have reason to be greatly surprised. At present, moreover, they are, without doubt, inclined to think it an incident without import, the effects of which will not survive the cause that produced it. We believe this to be an error, which will gradually disappear, even among the incredulous.

"England is, perhaps, the only nation which has never made war for an idea. On the other hand, a score of times, she has gotten up coalitions by means of which she has unexpectedly taken hostile steps against powers whose commercial or maritime rivalry appeared formidable to her. In point of fact, France causes her less umbrage than does Germany. England does not greatly dread the commercial and maritime competition of France. Germany, whose industrial prosperity is founded on the same bases as those of British industry, is, for her, a much more dangerous rival. It is cheap coal and iron which assures, much more than the colonies, the manufacturing and commercial greatness of England. It is the iron and coal of the Rhenish-Westphalian basin which makes the economic greatness of Germany. Already, the technical progress of German metallurgy is causing so much apprehension on the part of English manufacturers that the great metallurgic syndicate recently sent to Germany agents who have been treated as spies by the Cologne Gazette. Less is known of the general growth of German commerce and its favorable competition with British commerce on ground which seemed to be reserved for the latter—that of the English colonies.

"The idea has occurred to us to ascertain what could have caused the growth of the German exportation to the British colonies, and the discoveries we have made exceed our expectations.

"It has not been possible for us to determine the sum total of German importations except for eleven British colonies. But the richest and most important—India, Canada, New South Wales, Victoria, and the Cape of Good Hope—appear in our list. This furnishes a comparative table of importations from Germany into these colonies for a period of ten years. These colonies have a population of 232,800,000 inhabitants, of whom nearly

8,000,000 are whites. It is much the greater part of the colonial empire of Great Britain. From whatever point of view, the results for the whole must, therefore, be conclusive.

Importations into the British colonies from Germany.

Colonies.	1882.	1892.	Increase.	Decrease.
India.....	£78,252	£1,525,887	£1,447,635	
Straits Settlements.....	213,270	244,872	31,602	
New South Wales.....	120,951	581,402	400,451	
Victoria.....	105,469	473,576	368,107	
Cape of Good Hope.....	87,853	212,596	124,743	
Lagos.....	99,338	149,002	49,664	
Gold Coast.....	15,474	73,773	58,303	
Sierra Leone.....	20,640	26,420	5,780	
Canada.....	308,334	1,147,301	838,967	
Newfoundland.....	1,660	*311		£1,349
Jamaica.....	2,877	8,574	5,697	
Total.....	1,114,118	4,443,714	3,329,594	1,349

* 1891.

"So that, in the space of ten years, the German exportations have increased from 27,855,000 francs (\$5,381,805) to 111,070,000 francs (\$21,436,510).

"We do not attach an exaggerated importance to the rate of increase, which is phenomenal (298.86 per cent). There is, in this prodigious development, an element largely artificial.

"In 1882, the value of British exports to the above-named colonies already exceeded twenty-eight millions. But the surplus fell off in transit through English ports or those of the Continent. The establishment of regular steamship service with the far East and Australia supervening in the meantime, has given to Germany the indirect trade. Nevertheless, the difference is so great that it has certainly provided a considerable increase.

"The German statistics furnish us the following data as to the total of German exports with English colonies as their destination:

To—	1883.	1888.	1889.	1892.
	Marks.	Marks.	Marks.	Marks.
India.....	6,798,000	8,454,000	26,502,000	32,278,000
Canada.....	2,151,000	7,281,000	16,355,000	14,775,000
Australasia.....	5,660,000	12,022,000	21,255,000	20,679,000
Comparative amounts.....	14,609,000	27,757,000	64,112,000	67,732,000
Cape Colony and Natal.....			7,519,000	6,911,000
West Indies.....			1,655,000	925,000
Total.....			73,286,000	75,568,000

"From 1883 to 1888, the increase, amounting to 13,158,000 marks, say 16,447,000 francs (\$3,174,271), is approximate, because the indirect shipments from the great ports, formerly free, of Bremen and Hamburg are not

shown. The increase from 1888 to 1889 is exactly shown by the addition of these shipments. From 1889 to 1892, there was a new and steady growth of 2,282,000 marks (\$543,116), notwithstanding a falling off in the exports for South Africa and the Antilles. In short, in the space of eight years, the German exports to all the British colonies, except those of western Africa, have certainly increased by 15,440,000 marks (\$3,674,720). Altogether, we think the substantial increase is in the neighborhood of 30 per cent. During that period, what of the exports from England to the same colonies?

As to the colonies included in our first table, they present the following figures:

Colonies.	1882.	1892.	Increase.	Decrease.
India.....	£45,527,220	£58,855,991	£13,328,769	
Straits Settlements (Singapore).....	3,977,135	3,158,627		£818,508
New South Wales.....	11,155,917	8,883,983		2,271,934
Victoria.....	8,980,420	6,857,090		2,123,330
Cape of Good Hope.....	7,613,396	7,695,905	82,509	
Lagos.....	279,979	323,565	43,586	
Gold Coast.....	305,856	407,038	101,182	
Sierra Leone.....	272,495	332,198	59,703	
Canada.....	10,541,113	8,496,254		2,044,859
Newfoundland.....	711,300	457,855		253,575
Jamaica.....	726,413	1,001,228	274,815	
Total	90,091,324	96,500,334	6,409,010	

"Altogether, they increased only £6,409,000 (\$31,186,194), or 7.1 per cent. They decreased for Canada by 50,000,000 francs (\$9,650,000), although those from Germany increased by 21,000,000 francs (\$4,053,000). They decreased by 110,000,000 francs (\$21,230,000) in Australia, where German commerce increased by 19,000,000 francs (\$3,667,000). A similar contrast presents itself at Singapore.

"Admitting that these differences were exclusively due—which is not the case—to the disappearance of transit business from the British ports, it is not the less evident that that traffic has vanished, and that the British merchants, brokers, and shipowners suffer.

"The German competition has certainly caused great injury to the ocean commerce of Great Britain.

"The commercial marine of Germany grows day by day. In its capacity for transportation, it surpasses the naval effective of Norway, which holds second place among the mercantile marines of the world. It increases more in the same way than the English marine, that is to say, by the advantage of heavy and bulky outgoing freight, coal and metal products; by the advantage of an incoming freight, the cereals which the country does not produce in quantities sufficient for a population which increases much more rapidly than that of the British Islands.

"Germany is increasing the direct competition with England from the commercial, manufacturing, and maritime point of view. She has combatted

her upon the colonial region in Africa in opposing her veto to the absorption of the eastern part of the Kongo State; she has clipped the wings of that fine daydream of an English Africa from the Cape of Good Hope as far as the mouths of the Nile; she threatens South Africa and contends triumphantly in the British markets. Pitt or Palmerston would not have waited long to declare war on account of it, to sweep away her colonies, to blockade her ports, to destroy her arsenals, and her dock-yards for naval construction.

"If the great war is even possible in our epoch, the first cannon shot will be fired by a British war ship upon some German steamer."

British Trade Returns.—The accounts of trade and navigation of the United Kingdom for the month of February and for the two months ending February 28 and 29, 1895 and 1896, make the following showing of imports and exports:

Imports.

Articles.	1895.	1896.	Increase.	Decrease.
<i>Month of February.</i>				
Animals, living (for food).....	\$2,370,994	\$4,119,152	\$1,748,158	.....
Articles of food and drink :				
Duty free.....	42,150,231	55,476,891	13,326,660	.....
Dutiable	7,923,571	8,510,780	587,209	.....
Tobacco.....	893,744	1,460,832	567,088	.....
Metals.....	6,339,196	8,125,524	1,786,328	.....
Chemicals, dyes, and tannics.....	3,018,832	4,463,324	1,444,492	.....
Oils.....	1,066,287	3,780,696	1,814,409	.....
Raw materials for textiles.....	32,852,188	35,608,871	2,756,683	.....
Raw materials for other industries.....	9,123,838	13,364,217	4,240,379	.....
Manufactured articles.....	26,161,533	31,786,152	5,624,619	.....
Miscellaneous goods.....	3,782,932	5,478,713	1,695,781	.....
Parcel post.....	317,648	454,645	136,997	.....
Total.....	136,900,994	172,629,797	35,728,803	.....
<i>Two months ending February 28 and 29.</i>				
Animals for food.....	4,681,001	7,870,045	3,189,044	.....
Articles of food and drink :				
Duty free.....	99,920,054	116,334,988	16,414,934	.....
Dutiable	17,415,702	17,721,641	305,939	.....
Tobacco.....	2,000,876	3,002,682	1,001,806	.....
Metals.....	14,145,228	16,336,622	2,191,394	.....
Chemicals, drugs, and tannics.....	5,940,959	8,436,277	2,495,318	.....
Oils.....	5,759,966	7,786,807	2,026,841	.....
Raw materials for textiles.....	79,689,071	79,408,142		\$280,929
Raw materials for other industries.....	22,259,882	28,885,257	6,625,375	.....
Manufactured articles.....	53,819,463	61,408,862	7,589,399	.....
Miscellaneous goods.....	9,665,182	11,600,690	1,935,508	.....
Parcel post	944,214	1,051,538	107,324	.....
Total for two months.....	315,741,598	359,843,551	44,101,953	280,929

Exports.

Articles.	1895.	1896.	Increase.	Decrease.
<i>Month of February.</i>				
Animals, living.....	\$177,234	\$247,159	\$69,925	
Articles of food and drink.....	2,911,874	3,552,160	640,286	
Raw materials.....	5,306,509	5,980,679	674,170	
Manufactured and partly manufactured articles:				
Textiles and yarns.....	39,128,666	46,040,457	6,841,791	
Metals and metal goods.....	8,817,062	12,602,804	3,885,842	
Machinery and millwork.....	4,676,056	5,897,709	1,221,653	
Apparel and personal effects.....	3,454,154	4,471,791	1,017,537	
Chemicals, chemical products, and medicinal preparations.....	2,985,174	3,490,805	405,631	
All other.....	9,760,694	12,944,650	3,183,956	
Total manufactures.....	68,891,806	85,448,216	16,556,410	
Parcel post.....	414,568	551,483	136,915	
Total British exports.....	77,701,991	95,779,697	18,077,706	
Foreign products.....	23,032,226	27,435,637	4,403,411	
Grand total exports.....	100,734,217	123,215,334	22,481,117	
<i>Two months ending February 28 and 29.</i>				
Animals, living.....	362,563	513,306	150,742	
Articles of food and drink.....	6,470,847	7,819,793	1,348,946	
Raw materials.....	11,673,685	13,433,944	1,760,259	
Manufactured and partly manufactured articles:				
Textiles and yarns.....	84,066,502	95,189,503	11,123,001	
Metals and metal goods.....	18,712,550	25,004,090	6,291,540	
Machinery and millwork.....	10,232,871	12,400,704	2,167,833	
Apparel and personal effects.....	7,263,415	9,293,213	2,029,798	
Chemicals, chemical products, and medicinal preparations.....	6,209,712	7,198,011	988,299	
All other.....	20,566,235	26,611,122	6,044,887	
Total manufactures.....	147,051,285	175,696,643	28,645,358	
Parcel post.....	822,743	1,120,810	298,067	
Total British exports.....	166,381,123	198,584,496	32,203,373	
Foreign products.....	40,364,088	50,917,527	10,553,439	
Grand total exports.....	206,745,211	249,502,023	42,756,812	

RÉSUMÉ FOR THE TWO MONTHS.

Imports.....	\$315,741,598	\$359,843,551	\$44,101,953	
Exports.....	206,745,211	249,502,023	42,756,812	
Excess of imports.....	108,996,387	110,341,528		

Japanese-Australian Trade.—The British Trade Journal, of London, for March contains a report from the British consul at Tokyo on the prospects for increase of trade between Japan and Australia, in which he says: The value of imports from Australia is still very insignificant, amounting to only \$193,000 in the quarter under review (ending September 30, 1895), and to

\$520,000 for the first nine months of 1895. Insignificant though it is, however, it has been a steadily increasing one since 1891, but neither this increase nor anything in the present or prospective requirements of Japan warrants the extravagant hopes, which now seem to be entertained in Australia, as to very speedily finding or creating a profitable and extensive market for her productions here. That a considerable trade may be developed between the two countries is possible, but if so, its main feature will be that of exports from Japan to Australia. Many Japanese productions, which are peculiarly her own, will no doubt find a large sale in Australia. Rice has already been exported in considerable quantities, and silk piece goods and handkerchiefs, cotton, carpets, and fancy piece goods, the beautiful and serviceable floor matting which has already become so popular in the United States, bronze, porcelain, and lacquer work; fans and screens might also all be extensively and profitably exported. And if the people of Australia seek cheapness without being particular as to durability, Japan can also soon supply them with a hundred articles which they either now make for themselves or import from England or Germany—matches, boots, saddlery, harness, portmanteaus, hats, etc.—all of which Japan could furnish to them at less than half the prices which they would have to pay for European prototypes.

Japan has, on the other hand, at present absolutely no requirements that Australia could supply which are not already satisfactorily met by the much nearer United States, and it is improbable that, unless tempted by lower prices, Japanese buyers, who are, it is to be remarked, strongly attracted to the people of the United States by sentimental reasons, and also by the further consideration that they are by far Japan's best customers for all the great staples of her export trade, will ever seek in Australia articles which they can obtain in less time and equally good from the United States. Among these are flour, leather, preserved provisions and fruits, wine, biscuits, butter, lard, beef, etc. For several of these the demand is at present utterly insignificant, but for some of them it may, in a very few years, be largely increased, as in the case, for example, of frozen beef. The supply of cattle in Japan is not increasing, while the consumption of beef is, and it is the opinion of most butchers that ere long recourse for it must be had to either the United States or Australia. Some discussion is now taking place as to improving the breed of horses in Japan, and though much has already been done toward this end in past years, it is not unlikely that further steps may soon be taken. If so, Australian stallions and brood mares may be imported, but even in that case it will be only by the Government to a limited extent and experimentally. Of a wholesale import of Australasian horses for general use, there is not the smallest prospect. And almost the same may be said as to wool and mutton, two of their principal productions, concerning which Australians seem to entertain very sanguine hopes of finding a large market in Japan.

Industrial Competition of the East.*—The Society of Political Economy, of Paris, had a discussion the other day on the industrial development of the far East and its influence on European industry, when M. Bellet assumed the affirmative, giving facts and particulars with which our readers are fairly conversant, pointing out that in consequence of the extraordinary cheapness of labor, facility of transport, and reduction of freights, the products of the far East will soon be competing with European products on western markets. This has been termed the "yellow peril." M. L. Strauss, formerly Belgian consul in Japan, did not agree with M. Bellet in his conclusions. Without denying the very real influence that the exports of the far East may have on European markets, M. Strauss estimated that by the force of things the price of European products would continually diminish. If the Chinese or Japanese workman can content himself with a salary as small as he does, it is because he has few wants, and that, on the other hand, he gives relatively little labor for his money. "We have every interest," he said, "in having rich clients, and the richer the far East is, the more it can offer us products in exchange for goods which we can furnish under better conditions than they can. It is the law of the economy of forces—international cooperation, the common action of humanity. I do not wish to deny the qualities of the Chinese race, the most active and the most industrious of Asia. M. Bellet has said, with reason, that the Chinese workman is attentive and patient; he has the passion to acquire and amass; he respects authority; he will work for a salary which we consider ridiculous; he is badly fed, and his capacity to work is much inferior to that of the western laborer. It is the same with the Indian and the Japanese. These peoples are sober, but the sobriety diminishes with the increase of well-being. You can see it in the open ports of China and Japan. The workmen of Asia are excellent day workers, but they are not at present inured to the work of great industries. They have not the ability of Europeans. If, then, the labor of China or India is abundant and cheap, it is especially so for agricultural and small industries. But for great industries the return will be small, and the expenses of installation and direction are higher. And if labor improves, it will mean an improvement in well-being and an increase of wages. As large mills are established, the condition of the people will improve and consumption increase. This progress causes in countries more advanced orders for further machinery and for the supply of new wants created. Certain branches of work with us will profit by this demand, and the workmen of these branches in their turn augment consumption. All the world will profit." It was this point, he thought, that had not been sufficiently considered by M. Bellet. In concluding, he pointed out that to create great industries Asia would require capital, which it has not got. It would have to borrow from Europe. This is what India had to do for its railways and industries, for the larger part. Capital in Europe is content with 3 or 4 per cent; in India, it demands 9, and India is under the British Government. In China and Japan, it would

* From the London and China Telegraph, March 2, 1896.

require a higher rate. The equipment required for the railways, mills, and other works to be formed in China will have to come from Europe, and these orders would in themselves neutralize somewhat the effects of eastern progress. In fact, the awakening of the far East will prove a double benefit.

Rumored Japanese Steamship Service on the Pacific Coast.—The British Board of Trade Journal for February says:

The Japanese consul at Tacoma, Wash., has, according to the Handels-Museum of December 26, 1895, officially announced that he has been commissioned by his Government to select a port on the Pacific Coast, the best suited as a port of arrival for Japanese steamers, it being the intention of the Japanese Government to pay substantial subsidies to a steamship company which will make regular voyages between Japan and the Pacific Coast. Regular steamship communication already exists between Japan and Australia.

With reference to the above rumor, Mr. Kurino, the Japanese minister to the United States, in answer to an inquiry from the Department of State, writes, under date of March 17, 1896:

I have the honor to acknowledge the receipt of your communication dated the 29th of last month, in which you inform me that you have been unofficially advised that the Japanese consul at Tacoma, State of Washington, has officially stated that he has been commissioned by his Government to select a port upon the Pacific Coast the best suited as a port of arrival for Japanese steamers, it being the intention of the Government of Japan to pay subsidies to a steamship company which will make regular voyages between Japan and the Pacific Coast. As I was without information upon the subject, I delayed replying to your communication until I could ascertain from the Japanese consul the facts in the case. I am now in receipt of a report from him, in which he informs me that he has not received any official instructions whatever upon the subject, and that he has not made the statement attributed to him.

Guatemala's Exposition.—The Review of Foreign Commerce (*Revue du Commerce Extérieur*), of Paris, of February 8, 1896, says an American exposition will open at Guatemala on the 15th of December next. M. Challet, the French minister to Guatemala, states that French merchants should take advantage of the occasion to establish a permanent exhibit of their goods and combine to raise means to defray the cost of a pavilion, which the Government of Guatemala would cede to them under advantageous conditions, and to pay the salary of the agent intrusted with representing them in making known the value of their wares to the visitors. The most interesting articles exhibited would be textiles, lace work, jewelry, foot wear, coach making, saddlery, porcelain, glassware, furniture, hardware, domestic articles, and wines and liquors.

Exposition of Nijni-Novgorod in 1896.*—For the purpose of grouping the more striking examples of improvements made in our day in the construction of material and equipment for railroads, from the industrial, commercial, or

*Translated from *Revue du Commerce Extérieur*, Paris, February 22, 1896.

agricultural standpoint, for standard-gauge railroads or for subsidiary cheap roads of narrow gauge, the (Russian) Minister of Finance has thought proper to permit foreign manufacturers to present their products at the industrial and fine arts exhibition which is to open at Nijni-Novgorod in the month of May, 1896. On equal terms, will be admitted plans and models of ships of improved construction, particularly those intended for river navigation, and for service on canals, as well as the different methods of traction and propulsion which might be adopted in Russia.

International Exposition at Brisbane.*—According to the British Museum, of London, a joint-stock company, with a capital of £10,000, has recently been formed at Brisbane, Queensland, with the object of holding in that city an international exposition of manufactures, science, and art. This exposition, the opening of which should take place in 1896, will not be held until 1897. The enterprise has for its chief promoter Mr. Jules Joubert, who has already organized the exposition for Tasmania.

Project for Construction of a Port at Astrakhan.—Some one writes from St. Petersburg to the Commerce, of London, says the Review of Foreign Commerce (*Revue du Commerce Extérieur*), of Paris, of February 22, 1896, that the Russian Minister of Ways and Communications has approved the project for the construction of a new port at Astrakhan, and that he intends to demand of the imperial council the credit necessary for the execution of the preliminary works. The object of the enterprise, it appears, will be to facilitate the development of the commercial relations of Russia with Persia by way of the Caspian Sea. Russia imports from Persia, by that route, fine embroideries, raw silk, drugs, rhubarb, etc., and she exports in return, hides, woolen articles, salted fish, caviar, and isinglass, or fish glue. The city of Astrakhan, which has a population of about 50,000 inhabitants, is built upon an island at the mouth of the Volga. The greater part of the houses, built of wood, are insignificant, and the curing of fish, which is the chief industry of the city, makes residence there anything but pleasant.

Sugar and Coffee Crops of Java.—A letter from Amsterdam to the London and China Telegraph of February 22, 1896, says: The reports from Java regarding the sugar and coffee cultivation are not satisfactory. Several sugar manufactories will be closed during this year, on account of the low prices ruling for the article at present. Two other manufactories will be sold, and five have received notice that the existing relation with a leading Java firm will be terminated. Some of these will, however, be able to make

*Translated from *Revue du Commerce Extérieur*, Paris, February 22, 1896.

a contract with the Netherlands Trading Company. As regards coffee, smaller crops are expected this year, especially in the Malang districts, as also from the estates of the Kloet and Soekaboemi.

A New Chinese Mint.—The North China Herald, of Shanghai, dated January 31, 1896, says: Shêng Hsio-jên, the father of Sheng Taotai, has obtained permission from Governor Chao, of this province, to build a mint at Soochow for the coining of dollars and subsidiary money. The works will be inside the Stimên gate, and the machinery from Europe is expected to arrive here within the next six weeks. The governor has advanced 50,000 taels for this purpose.

New Duties for the Philippine Islands.—The London and China Telegraph, of March 7, 1896, prints extracts from a British consular report on the trade of the Philippine Islands, which says: An export duty of \$2 per 100 kilograms has been imposed on all rice shipped from these islands since July 20 last. The import duty on petroleum has been increased to \$4.50 per 100 kilograms on all shipments made on or after July 20 last. With the view of providing for the outlay that would be incurred by placing the currency in the Philippines on a nearer level to that of the mother country, the Government has increased the import duties on all goods introduced from foreign countries by 4 per cent. This advance will be levied on all goods that left their port of shipment on or after July 20 last.



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